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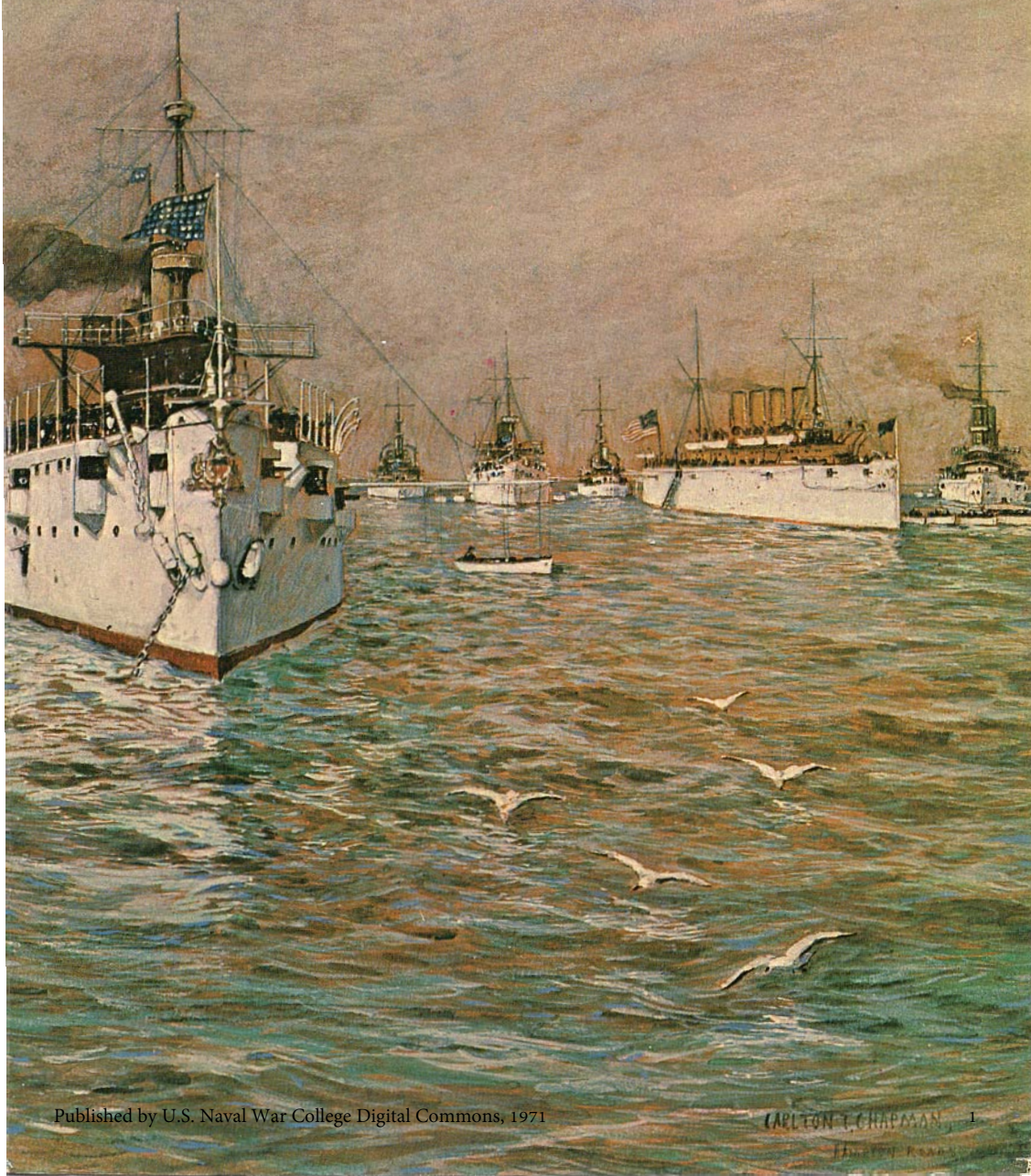

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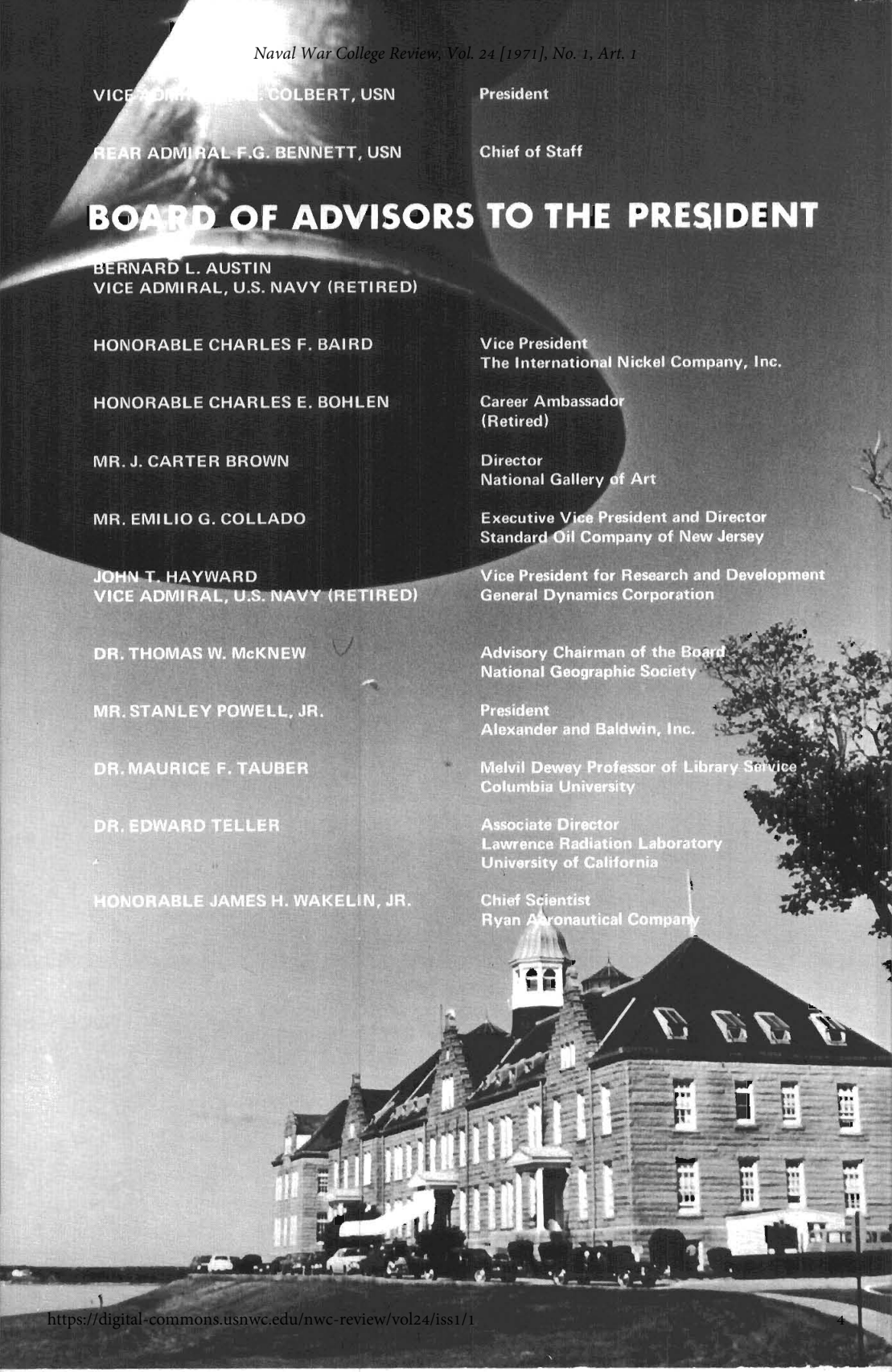


CHALLENGE !

An expanded U.S. military assistance program will be an indispensable factor in the success of the Nixon Doctrine, the strategy for the 1970's.

We are at the beginning of a new chapter in American history, one in which our Government has asserted that we will no longer carry a disproportionate share of the defense burden of the free world. Therefore, we are moving toward an era in which others must do more in the collective defense effort. This is the essence of that crucial pillar of the Nixon Doctrine: partnership.

But if our friends and allies are to assume a greater share of the defense burden, we will, in many cases have to help them obtain the necessary tools and expertise essential for the development of viable defense establishments. For sister navies this means needed ships, aircraft, and weapons systems along with education and training where desired for their officers and men—all to be provided through a reinvigorated, reoriented military assistance program.

The Task Force on International Development known as the Peterson Committee—created in September 1969 of private citizens to examine U.S. economic and military assistance programs—reported to the President last March. In that report the task force cited the primary goal of our military assistance program: to improve the military capabilities of our allies so that they may move toward a greater degree of military self-reliance.

If this goal is to be realized, with fully capable indigenous forces replacing U.S. forces in various world areas, the military structures of many nations long dependent upon the United States will have to be significantly strengthened. This means too, I believe, that our stronger allies, notably those of Western Europe and Japan, whom we assisted for so many years, will have to help prepare and equip the smaller allied nations in this worldwide program. But if we are to expect our politically healthy, economically viable, and militarily strong allies to increase their own military assistance to the weaker developing nations, we will have to provide the leadership and initiative as well as improve *and* increase our own national efforts in this field.

If the past is any indication of the future, we have a long way to go. The historical example of the last few years is not encouraging. As Secretary of Defense Laird recently reported, the appropriation for the Fiscal Year 1970 Military Assistance Program was the lowest in the history of the program, a scant $350 million. Prior to 1967 the appropriation averaged some $2 billion annually!

In the face of severe military assistance cutbacks, we are continuing our own force reductions. As of last fall, there were well over 100 foreign base reduction actions taken. There have been over 65 foreign base closures since January 1969. These decisions have accounted for a cutback of more than 60,000 civilian and military personnel overseas, and it is estimated that by this spring the total number of U.S. military

forces overseas will be at least 300,000 below the level in force 2 years ago.

Despite these drastic reductions in our own strength, we cannot expect others to assume immediately the massive defense burden which has been ours almost exclusively over these past two and a half decades. But we can expect them, with adequate help and support, to progressively accept an equitable share of the burden, particularly in connection with regional security arrangements. While many nations are clearly willing and able to supply the manpower to provide for their own and regional defense, they lack the means necessary to convert that available resource into well-trained and well-equipped armed forces. It is here that our planned military assistance and foreign military sales programs, to be titled the International Security Assistance Program (ISAP), are crucial if the defense of the free world is not to be seriously degraded with the lowering of the overseas U.S. military profile of the United States.

As the Peterson Committee argues, the "amount of military assistance allocated among countries should be related to a realistic assessment of needs, not to historic assistance levels." We are opening a new chapter, we are at a new crossroads, where old ideas and old policies are no longer applicable. The needs of each of our allies must be given a close, hard look. New programs will have to be initiated programs to develop military forces adequately to replace our own; programs which will provide for meaningful security arrangements on a national as well as a multinational area basis. If free world security is not to be jeopardized, these programs must begin *now*.

Three-quarters of our current grant assistance (outside of that to Southeast Asia) is used to finance operations and maintenance of equipment and weapons already provided. "In these circumstances," the task force report observes, "it does not seem possible that the receiving nation can both become self-reliant and modernize its forces. Unless these problems [of our outdated military assistance program] receive careful attention, the United States faces the prospect of continuing the program indefinitely, without any assurance of improvement in local force capabilities."

But this is *not* what we want. This is *not* what the new strategy envisages. The crucial question therefore is: Are we going to continue an outdated program of assistance which does nothing to substantially augment indigenous capabilities, all because we are penny-wise and pound-foolish? The initial costs of new and revitalized assistance programs may well be great. But the long-term results for free world security will certainly be greater.

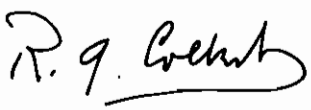
Past and current legislative restrictions have kept the United States from providing "sophisticated" military equipment to the developing nations. There have been two essential reasons: first, to avoid unnecessary arms escalation; and second, to save resources which might be better directed to social and economic reform. But the end result has been that many of the nations denied arms by us have acquired them by turning elsewhere. And they have been bitter toward the United States. Continuing to treat our friends and allies as immature, not recognizing their pride and dignity as sovereign nations, is hardly the way to begin this new era of partnership. This Nation must recognize that the vacuum left by our own worldwide reductions can be filled only by realistic regional programs, ones wherein hard weapons systems, training, and equipment are provided in sufficient quantity to those we expect to be truly equal partners in our collective defense.

The guiding philosophy and behavior of the United States and military aid recipients alike must be self-reliance. For the United States and for the

recipients, it is better to supply American equipment than American troops. It is better for the United States because it reduces the requirement for maintaining forces overseas. And it certainly is more economical. For the recipients, it is better because no nation likes to be beholden to another. The development of viable defense forces as envisaged on an area basis will certainly help satisfy the pride and independence of the developing nations in providing for their own basic security.

Secretary Laird has repeatedly cited the challenge, calling for a vigorous and revitalized military assistance and foreign military sales program. It is an

> absolutely essential ingredient of our new Foreign Policy for the 1970's. Without such a program, we will be severely restricted in our determination to honor our obligations, to support our allies, and, at the same time, to reduce present U.S. forces in Asia and elsewhere while diminishing the likelihood of having to commit American ground combat units in the future.



R. G. COLBERT
Vice Admiral, U.S. Navy
President, Naval War College

Cover: Portrait, "Before the War, the North Atlantic Squadron at Hampton Roads," by Carlton T. Chapman (1860-1925)—a famous artist of naval ships and maritime scenes. This work was presented to the Naval Historical Division of the Office, Chief of Naval Operations in July 1958 by Captain Richard G. Colbert, who is now serving as President of the Naval War College.

The political abrasions that persist in the international power system require a rational employment of today's weaponry. It is therefore essential that antagonists carefully balance the objectives they seek against potential costs and risks. By a judicious calculation of risks against potential gains, coupled with a moderate amount of wisdom, it should be possible to keep from being either Red or dead.

WAR: LIMITATIONS AND NATIONAL PRIORITIES

A lecture given at the Naval War College

by

Commander James A. Barber, Jr., U.S. Navy

I do not suppose that I need to argue for this audience the proposition that those factors which have led to conflict between groups of armed men throughout man's history are still operative. In today's world we witness this in the Soviet Union's objective of expanding its area of influence at the expense of Western influence while, at the same time, the United States is committed to opposing this expansion. The result of this opposition of aims, which was called the cold war until that became a taboo term, is a situation of continuing conflict which can take a number of forms, ranging from the purely diplomatic (which is often only a way of describing the circumstance in which the iron fist is concealed by the velvet glove) to large-scale war. There is nothing unusual in the opposition of aims between the Soviet Union and the United States. My point is that conflict between organized power groups is a continuing fact of human history, and force continues to have a role in man's affairs. It is important that this role be as controlled, rational, and constructive as possible.

One of the most important lessons to be gleaned from Clausewitz is the primacy of the political objective in war. Yet we have reached a point at which certain forms of war—specifically, large-scale war conducted with thermonuclear weapons—cannot conceivably be a rational route to gaining any state's national political objectives. Total war has become unacceptable, and it must be a continuing fundamental aim of our national policy to prevent total war or any situation likely to result in total war. On the other hand, since force continues to be a major factor in relations between

states, we must continue to be both able and willing to use appropriate force in the defense of our legitimate national interests.

It is within this framework--the promise of continuing conflict, coupled with the unacceptability of total war—that policy must be made. So long as the condition of mutual deterrence lasts, it is unlikely that the United States, the Soviet Union, or any other nuclear power will deliberately instigate total war, though this does not rule out the possibility of total war through accident or miscalculation. Thus the answer to my implied question "Why limited war?" is that we do not know how to do away with war, but do know that unlimited war has become suicidal —so that, like it or not, we must be prepared to fight limited wars.

What is Limited War? One of the major difficulties in any discussion of "limited war" is that it is not one thing, but several. Consider, for example, these definitions as used by the Joint Chiefs of Staff:

> **limited war**—Armed conflict short of general war, exclusive of incidents, involving the overt engagement of the military forces of two or more nations.
>
> **general war**--Armed conflict between major powers in which the total resources of the belligerents are employed, and the national survival of a major belligerent is in jeopardy.
>
> **incidents** Brief clashes or other military disturbances generally of a transitory nature and not involving protracted hostilities.

You will note that the official definition of limited war encompasses essentially every kind of international conflict which lies between the extremes of "incidents" and "general war." If you accept my argument that any war in which "the total resources of the belligerents are employed" would amount to mutual suicide if between the superpowers, then by definition the only kind of war which can rationally be waged is limited war.

Admiral Eccles has an excellent diagram of the spectrum of conflict in his book *Military Concepts and Philosophy*, as reproduced in figure 1. There are several interesting features in his diagram. At the bottom of the diagram is a representation of the way in which the proportion of force to the proportion of negotiation varies as we move up or down the spectrum. I would disagree mildly with the way in which the diagram is drawn, for I would argue that even at the limits both negotiation and force are present. Even when pure sweetness and light seem to prevail, there is always at least an implicit threat of force in the background--the hint of things that might be done. And at the other extreme there is always a degree of negotiation involved, even if it takes the form of an ultimatum of the sort "surrender unconditionally or be destroyed."

Of particular interest are the overlaps shown in the diagram. Note the large overlap between the area of controllable war and uncontrollable war and between peace, cold war, and hot war. It is these areas of uncertainty, where we cannot be sure of what will happen, that are of greatest interest to the theory of limited war.

Finally, note that Admiral Eccles does not introduce nuclear weapons into his diagram until the column at the far right, which is in an area characterized as "uncontrollable" and "no limits." The argument over whether it is or is not possible to use nuclear weapons successfully in limited wars is the subject of considerable disagreement

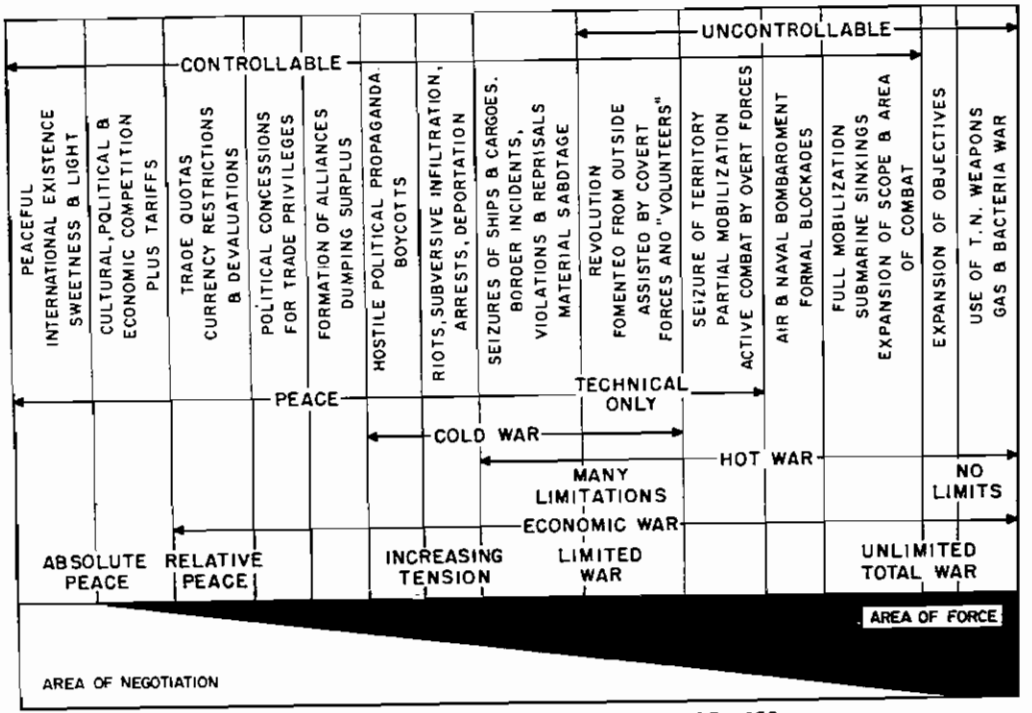


Fig. 2—The Spectrum of Conflict Showing Major Features and Areas of Overlap

Source: Henry E. Eccles, *Military Concepts and Philosophy* (New Brunswick, N.J.: Rutgers University Press, 1965), p. 37.

and one to which I will return a little later.

I hope it is clear from this discussion that the term "limited war" covers a very large area, both in size and kind of war. It includes large-scale conventional war with front lines, as in Korea; large-scale guerrilla war without clear battle-lines, as in Vietnam; smaller scale wars of all sorts; and presumably a number of kinds of war we have yet to experience. Most limited wars to date have been geographically limited, with surrounding sea areas serving as sanctuary. It is at least theoretically possible to reverse the situation and to fight a limited war entirely at sea, with the land serving as sanctuary. Admiral Eccles has pointed out to me that the United States-French naval war of 1798-1800 is an explicit example of just this sort of war.

Kinds of Limited Wars. In thinking about war, we have conventionally been concerned with a particular kind of a problem: winning the battlefield war, which involved controlling territory, defeating enemy armed forces, and occupying dominant positions. The objective in this kind of a war is the defeat of the enemy's armed forces. Interdiction of supply lines is carried out to weaken the enemy's military capacity. Victory is conceived as reducing the enemy to military impotence, so that we may impose our terms.

Yet this is not the only kind of a war with which we need to be concerned. The airpower theorist Giulio Douhet, and other less theoretical men before him, envisioned the use of systematic terror as a weapon in war. According to Douhet, the will of the enemy was the proper target of military power, and he thought that the will to fight could be broken more easily than an enemy could be defeated militarily.

In a parallel way, if you are asked what the target was of the first operational atomic bombs, the correct geographical response is Hiroshima and Nagasaki—but the correct psychological response is Tokyo. In dropping the bombs our intent was much less to weaken Japan's military strength than it was to convince her decisionmakers that it was prudent to surrender before suffering further pain and terror.

In this vein the brilliant strategic theorist Thomas Schelling has suggested that there are three kinds of limited war: wars of the battlefield, wars of risk; and wars of pain and destruction. The battlefield war is the kind most familiar to conventional military thought, involving, as it does, the primary aim of victory on the field of battle. Schelling cites the Korean war as an example of the battlefield war: it was primarily a military engagement and not a contest in brinkmanship or of civil damage and terror.

His example of the second kind of war, the war of risk, is a war that did not happen: the Cuban missile crisis of 1962. Schelling argues that,

> more than just raising the prospect, probably it should be construed as an actual instance of the new species, one in which no shots were actually fired. This new species is the competition in risk-taking, a military-diplomatic maneuver with or without military engagement but with the outcome determined more by manipulation of risk than by an actual contest of force.[1]

This kind of conflict can be likened to the game of "chicken" in which two cars head down the centerline of a highway toward each other to determine which will lose his nerve and veer off. It is the nuclear umbrella—the catastrophic consequences which would be involved in large-scale nuclear war—

[1]Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966), p. 16.

which makes this kind of conflict more likely.

Schelling's third kind of limited war, the war of pain and destruction, has several examples. He mentions among others the Vietnam war, the Algerian war, and the continuing conflict in the Middle East. The aim in this kind of war is to convince your opponent that his aim in pursuing the war is not worth the beating he is taking, in order to get him to abandon his objective. It is not the violence itself that does the persuading, but the threat of further violence. In other words, if the strategy succeeds, it is not because of pain that has already been inflicted, but because of the fear of pain that may be inflicted in the future. In these circumstances the reason for causing your enemy pain and terror is to convince him that you mean business and that more will follow if he does not accede to your demands.

In the real world no particular war is likely to be a pure type of one category or another. Almost every case will involve at least some elements of each of Schelling's three kinds of limited war. The Korean war, for example, which Schelling uses as an example of a battlefield war, was conducted under the nuclear umbrella and saw the use of a number of hints or threats about possible expansion of the war—which is characteristic of the war of risk. In the course of the war the United Nations forces consciously adopted a change in strategy, largely abandoning the battlefield war concept and adopting in part the strategy of the war of pain and destruction, using the descriptive title "Operation Killer."

The reason that the war of risk and the war of pain and destruction are more important now than they were in the past is that modern technology has made it possible to separate out the power to seize and hold from the power to physically harm. Before this century there was very little that military forces could do to cause pain and injury to enemy civilians without physically seizing the country. Tamarlane could conduct total war and build his mountains of skulls, and Rome could raze Carthage to the ground—but only after physically occupying the cities to be destroyed. In an era of intercontinental missiles with thermonuclear warheads, the capability exists to destroy a society just as thoroughly as Carthage was destroyed by Rome, but without ever setting foot on the enemy's soil. As a result, wars of risk have become more important, since the risk involved is probably greater and certainly more immediate than it has ever been before. The same is true for the war of pain and destruction. In earlier times the exchange of hostages was a frequent practice to serve as a guarantee of acceptable behavior. The threat was always that the hostages would be executed if an agreement was violated. The superpowers now wield military strength of a sort that can effectively make hostages of people thousands of miles away. It is no longer necessary to hold a hostage within your castle to be able to threaten his execution.

Having said this much, I cannot leave the topic without stating that I think that we have often misunderstood and overestimated what can be accomplished by inflicting pain and destruction. The stoic response of both British and German civilians to the bombing raids of World War II was unanticipated by the theorists of airpower, who had claimed that much smaller expenditures of effort could be counted upon to cause complete collapse behind the frontlines. I think that we must also admit that our bombing of North Vietnam was relatively ineffectual in bringing about the response we hoped to obtain. There are, of course, many who will argue that if we had done it a different way, either by more rapid and intensive attacks or with greater freedom of target selection, that we would have been able to bring North Vietnam

to terms. That may be, and I know of no way to prove it one way or another, but the point is that we caused a rather substantial amount of pain and destruction to North Vietnam without bringing them to terms.

Somehow we often expect an opponent to react differently to punishment than we would react ourselves. For example, we often expect him to react to the destruction of his property by becoming more reasonable and ready to talk peace—yet we know that our reaction to having the same thing done to us would be to become more angry and determined—at least so long as we had not lost the physical capacity to fight.

A related kind of psychology is the tendency for nations to develop a psychic investment in a conflict because of the losses they have sustained in the fighting. The rallying cry becomes the need to insure that the fighting men have not died in vain—and to a rather considerable degree, the greater the losses, the greater the determination to persist. It is not unknown for this to become such an important issue that it submerges the original objective of the war.

One of the problems with the war of pain and destruction is that we really do not know under exactly what circumstances threats or pain are likely to achieve our aims and under what circumstances they are likely to be ineffectual or even counterproductive. About all we can say for sure at this point is that there has been a historic tendency to overestimate what can be accomplished by attacks against a civil populace, and we should view plans based upon such optimistic estimates with a considerable amount of caution.

On the whole, those who have fought on the guerrilla side of guerrilla wars seem to have been able to make the most effective use of the technique of inflicting pain—perhaps because they are under fewer inhibitions than are most legitimate governments. Because the Communists are in the expansionist role and because we are in the conservative or containing role, there is an imbalance in the utility of destruction in conflicts between us.

In defending our allies against military assault, and particularly against wars of subversion, we almost inevitably wind up doing most of the fighting on the territory of our friends. We therefore must use sufficient force to accomplish a successful defense while somehow avoiding the destruction of the area being defended. Our opponents, on the other hand, usually have an incentive to maximize the destruction, to demonstrate to the world that it is futile to look to the United States for defense, since it results in devastation. Since it is almost always easier to destroy than to protect against destruction, we would seem to have the more difficult task.

The Concept of Escalation. One of the terms heard most often in connection with limited war is "escalation," and, like the term "limited war" itself, escalation tends to conceal a variety of meanings. It is, for example, used to describe at least two distinct processes: explosion and expansion. When we discuss the fear of escalation as a factor which tends to keep a war limited, we are talking about the danger of explosion—the possibility that the war will get out of control and involve us in a larger and more destructive war. When we talk of escalation in terms of actions such as attacking areas which had previously been considered to be sanctuaries, we are talking about expansion.

These two meanings of escalation can be related to two of the kinds of limited war we have been discussing. It is the fear of explosion that underlies the competition in risk taking- a technique that has sometimes been described as "baiting the nuclear tiger." If it were not for the danger that a confrontation could explode, the strategy of risk

taking would not be nearly so effective.[2] In the Cuban missile crisis, for example, it is reasonable to believe that the Russians were compelled to back down not so much because of local pressure in the Caribbean as by the fear that the situation could result in nuclear war. Thus when the term "escalation" is used in the explosive sense, it is closely related to the risk-taking strategy.

In a similar way, when "escalation" is used to mean expansion, it is often closely related to the war of pain and destruction. There is reason to believe that President Johnson saw the Vietnam war in much these terms, and the fundamental idea behind our strategy in Vietnam during much of the late sixties was based upon the notion that by steadily increasing the military pressure on North Vietnam we could ultimately force them to accept reasonable terms at the peace table.

The Limits of Limited War. If we look at the limited wars of the last 25 years, it is possible to identify several characteristics which they have in common, beyond the self-evident fact that they have all been controlled short of general war. First, there has been a marked reluctance on the part of almost everyone concerned to see direct battle confrontation between the troops of major powers. Even in the Korean war the Chinese placed considerable emphasis upon the claim that their troops were "volunteers" rather than regular units of the army. In other cases, as in Berlin and in the Cuban missile crisis, there has been an almost visible recoil from the possibility of direct confrontation between military units of the United States and of the Soviet Union.

Second, all of the conflicts have had rather specific geographical boundaries, usually within a single country, and there has tended to be an effort on the part of the nations involved to "decouple" conflicts from events elsewhere and keep them compartmentalized. One example of this is the fact that the United States and the Soviet Union have continued to negotiate seriously with one another on a variety of issues, including the SALT talks, at the same time that they have backed different sides in the Vietnam war.

Third, and related in a way to the geographical localization of the conflicts, in most of the wars, sanctuaries have existed which have served as supply and training bases. We have sometimes overlooked that this has been a reciprocal relationship. In the Korean war the Communists had a sanctuary north of the Yalu—but we enjoyed the same privilege at sea and in Japan.

Finally, and in some ways the most significant limitation, all of the wars of the last two and one half decades have involved important weapons limitations. So far as is known, biological weapons have not been used, chemical warfare has been restricted to nonlethal forms, and nuclear weapons have not been employed at all—although their use has been threatened from time to time.

It is impossible to say whether these particular limitations were always necessary in order to keep the conflicts limited. No one knows the exact probability that a limited war will flare into a general war, and as a result responsible decisionmakers prefer to make their errors on the conservative side. A mistake that resulted in large-scale thermonuclear war would be difficult to redeem.

Apart from these kinds of specific limitations, it is fundamental to the limitation of a war either that both sides desire that it remain limited or that the less powerful side does not possess the resources to expand the conflict. As I have already indicated, when nuclear powers are involved the fear that the conflict may explode to large-scale

[2] The term "brinkmanship" was coined when Secretary of State Dulles attempted to publicly discuss the strategy.

nuclear war is usually sufficient to insure that both sides are willing to observe limits. Nor is it unusual to see examples of the second kind, where resource limitation is involved. This is most frequent in the case of so-called proxy wars, where the actual conflict is between client states, who might themselves be willing to see expansion of the war but who are limited by the degree of willingness of their superpower sponsor to supply resources. This is probably a reasonably good description of the relationship between North Vietnam and the Soviet Union in the Vietnam war.

The "limits" or "rules of the game" which keep a war limited are rarely spelled out, and there is almost never an outside umpire to insure that the limits are observed. Limits are observed because both sides believe they are in their own best interests—usually because it is believed that a violation of some limit on your part would lead to the enemy abandoning a limit you find advantageous. Often rather clear signaling is involved, as, for example, in our violent reaction to the PT boat attack on the Tonkin Gulf destroyers. Whether or not it was the intent of our response, this served as a very clear message to North Vietnam that we would not allow the tradition of the sea as sanctuary to be violated without responding violently. This same kind of mutuality has undoubtedly had much to do with the nonuse of nuclear weapons—the advantages which might accrue militarily from using tactical nuclear weapons in limited war would, in most cases, be more than offset by the disadvantages of having the enemy respond in kind. The point is that the limits that are observed in limited war have very little to do with gentlemanliness or morality and very much to do with self-interest. In the main, wars remain limited because both sides conceive it to be in their own self-interest to keep them limited.

It almost goes without saying that the kinds of limits we have been discussing are viable only when accompanied by limited objectives. This seems self-evident, but it is not unusual to hear our own professional colleagues proclaim that "there is no substitute for victory in war." If this means only that winning is better than losing, I am sure that none of us would disagree—but if it means that each and every conflict must be fought through to the point that the other side surrenders unconditionally, then I consider it to be both mistaken and even dangerous. For if both sides can accept nothing short of total victory, then conflict is unlikely to remain limited. I would argue that it is more sensible to keep commitments and expenditures in line with the worth of the objective being defended—even if this means on occasion cutting our losses and accepting a limited defeat. Everyone who plays poker knows the particular kind of poor poker player who is unwilling to drop out of a pot once he has money invested in it and insists on sending good money after bad. Over any period of time he is invariably a losing player. The good player calculates what are called "pot odds," balancing the stakes to be won against what it will cost him to play—and in the long run he usually makes money. In a similar way, local wars are much more likely to be kept limited and capable of resolution if the battlefield objectives of the two sides are moderate, and they keep their investments commensurate with the worth of the objectives.

A point which should not be ignored is that there can be value in entering a limited conflict even if you lose—and when I say lose, I mean withdraw short of achieving the original objective which led you to enter the conflict. By forcing the enemy to pay a price in achieving his objective, you may very well make him more reluctant the next time. Thomas Schelling cites the example of the Swiss confederates in the 15th century, who in losing battles exacted

such a high price from their opponents that a very considerable reluctance developed toward engaging the Swiss on their own ground. The same principle still holds good, as the Finns demonstrated convincingly in 1939.

As I have already indicated, the fear of explosion into general war is one of the principal factors which serves to keep wars limited—and this results in a paradox. When the international situation is stable and neither side seriously fears that the other may initiate nuclear war, then the incentives to limit local wars are much less, and such wars can be of substantial size. On the other hand, if the situation of nuclear deterrence is unstable and both sides are fearful of what the other might do, they are likely to be very cautious in what they are willing to do in local conflicts. In such a situation the choice is likely to be between very low-level actions which are felt to be relatively safe or, if the situation has become so threatening that there are serious threats to national survival, to the contemplation of a preemptive strike—although this becomes a less viable alternative every year.

The Role of Nuclear Weapons in Limited War. One of the key questions of limited war concerns the role of nuclear weapons. There are two parts to the argument. One concerns whether it is or is not advantageous from our point of view to use nuclear weapons in a limited war, the other has to do with whether or not the use of nuclear weapons is compatible with the whole concept of limited war—that is, if nuclear weapons are used, can a war remain limited?

A number of strategists have argued that the use of nuclear weapons in limited wars would favor the West. This was the position taken by Henry Kissinger in his book *Nuclear Weapons and Foreign Policy*, though he subsequently changed his mind. Most of these arguments, which were popular in the late 1950's, were predicated, at least implicitly, on Western nuclear superiority and have been weakened considerably by the growth of Soviet nuclear capability. Any military advantages in the use of nuclear weapons tend to become much less appealing when both sides use them.

As mentioned earlier, if we are involved in the defense of friendly countries, it is in our interest to minimize the damage involved. If we assume, as seems likely, that initial aggression is initiated by the enemy, it is probable that a substantial portion of limited wars will be fought on the territory of our friends—who are quite unlikely to be appreciative of any tactical military advantages in the use of nuclear weapons on their native soil.

But what of situations like that of NATO, where it has been argued that we simply do not have sufficient conventional capability to defend Western Europe without the use of at least tactical nuclear weapons? I think that the answer to this is that the effective defense for Western Europe has not been any particular level of military forces in being, but rather that belief has crystallized around the idea that any large-scale conflict on European soil between NATO and Russian forces would almost inevitably escalate into all-out war. This expectation would seem to be the result of both our declaratory policy and of the NATO military structure, which has been specifically designed around the use of tactical nuclear weapons. It is the fear on the part of the Soviet Union that any major war in Europe would inevitably become a nuclear war that prevents any attempt by them to conquer Western Europe.

It has also been argued that any distinction between nuclear and conventional weapons is meaningless, since we now have nuclear weapons which have lower yields than some conventional

weapons, and as a result they are no longer distinguishable by size. This argument ignores the clear mental distinction that exists between conventional and nuclear weapons. Everyone understands the difference between conventional and nuclear weapons—they constitute clear-cut and separate mental categories, and everyone understands when the threshold has been passed. This is important when you are trying to keep a war limited. A conventional war has a kind of obvious and clear-cut limit. It may be high, but the limit is readily apparent and easily understood. The danger in using even the smallest of nuclear weapons is that once they are used a boundary which everyone understands has been passed, and there is no further clearly visible limit.

This is not to say that any war in which nuclear weapons are used will necessarily explode into general war, but only that the chances of it doing so are increased, because one of the clearest and most easily observed limits will have been breached. If other limiting factors, such as geographic limits, are sufficiently clear, if the superpowers are not directly involved, and if the overall strategic balance is relatively stable, it is possible that even a nuclear war might have a good chance of remaining limited. It is well to recognize that we really do not know very much about the stability and dynamics of nuclear war. We pretty well understand conventional war and from experience know that it can be controlled, but we have no parallel experience to count on where nuclear war is concerned.

It is possible that nuclear war at sea would be more susceptible to viable limits than would use of nuclear weapons against land targets, since it would still preserve a kind of clear-cut limitation. But even that would depend upon whether both sides were willing to observe the restraint. As soon as one side or the other decided that ports or airfields or shipyards were also fair game for nuclear attack, limits would have again become ambiguous.

We need to think through these problems in advance, for our expectations concerning the use or nonuse of weapons are reflected in our contingency plans and serve as the basis for both force structure and command relationships. The way in which both sides think through the problem of using nuclear weapons in limited war will be a major factor in determining the result of their use. If the expectation is that the use of nuclear weapons will inevitably cause an explosion of the conflict, there will be an immense reluctance to authorize their use—but if they are used, there will be an equally strong tendency to move directly to a preemptive attack on the assumption that the war *must* become general and therefore that it is best to get in the first blow. On the other hand, if belief is general that the use of nuclear weapons will *not* necessarily result in general war, then the chances are better that a nuclear war can be kept limited although the danger of moving up the escalation ladder one step at a time would still exist.

The whole problem of what to communicate to our opponents in limited war is a serious one. If we indicate that we feel that the use of nuclear weapons must result in an explosive expansion of the war, we will probably inhibit the use of nuclear weapons against us by an enemy—but then if the nuclear boundary *is* crossed, the situation will be immensely dangerous. But if we emphasize the possibility that nuclear wars *can* be kept limited we may reduce the danger *if* they are used but may be serving to encourage their use against us.

There is a further and related problem on what to communicate. Almost by definition we want to keep the war limited, and to do this it is well to emphasize our prudence and rationality—to communicate to our opponent that we are willing to observe certain

limits so long as he reciprocates by limiting his effort in parallel ways. The problem with doing this is that it is very likely to convince your opponent that you are not really serious about the whole thing. In a war of risk it may be most effective to make your opponent think that you are reckless and imprudent. After all, the main intent in the war of risk is to scare your enemy so badly that he backs off rather than running what appear to be unacceptable risks. On the other hand, you certainly do not want to frighten him so badly that he decides that a preemptive nuclear strike is the only course of action left to him.

The problem is that the requirements of keeping the war within limits are in almost direct conflict with the requirements of inducing your enemy to give in to your demands. As a result, there is no way of laying down a rule for effective behavior. As is usual, this is a case in which theory is no substitute for judgment—though hopefully the judgment will be better if based upon an understanding of theory. Sound judgment in limited war must be based upon the most careful balancing of objectives against risks and costs—and there is invariably uncertainty and imprecision with regard to each of the elements of the equation.

The effective limits on armed conflict are by no means so fragile that we must always and in every case choose the conservative and risk-minimizing course of action. In almost every case the factors which are operating to keep a conflict within some kind of limits are sufficiently strong to stabilize the situation enough to permit some risktaking. Yet no situation of conflict is ever so stable that we can afford to disregard the danger that it may explode into general war. The costs if that ever happens are so serious that actions which increase the risk must always be carefully weighed.

Terminating Limited Wars. The business of bringing a conflict to a satisfactory or at least an acceptable conclusion is crucial to the limited employment of force, but we do not really know very much about the techniques of ending conflicts. One approach, which I have already mentioned, is that there is no substitute for victory, and from the "nice-to-have" point of view this is undoubtedly right. The problem is that we are often quite properly unwilling to pay the costs or take the risks that would be involved. A further problem is that "victory" is not necessarily the proper objective in many cases, either because it costs too much or because it is not the best way to achieve our political objective. Old enemies frequently become new allies, and we sometimes find ourselves working diligently to undo the damage we caused in the course of obtaining victory.

Although they may not be substitutes in the sense of the phrase "there is no substitute for victory," there *are* several alternative ways in which armed conflicts can come to an end. "Victory" in the sense of the total defeat or unconditional surrender of one side or the other is, of course, one possibility. A second possibility is a settlement negotiated between the parties concerned. A third is a process of "winding down"—a kind of escalation in reverse—in which the level of effort exerted by each side becomes progressively less, with the conflict eventually fading away.

Other kinds of endings are possible only in the case of limited conflicts. One is the opposite of the process of winding down—in which the war gets out of control and becomes general. This is more a change of character than an ending—and generally the political stakes will have changed drastically along with the character of the war. Finally, a limited war can be terminated by a settlement imposed from outside,

either by an international agency or by other nations. Rarely is any given settlement a pure type. Most conflicts are ended by some combination of the several possibilities.

As a matter of interest, K.J. Holsti did an analysis of the outcomes of international conflicts during two 20-year periods. Thirty-eight of these took place between 1919 and 1939 and 39 during the period 1945 to 1965. He found that 63 percent of the conflicts in the earlier period were resolved by military conquest, annexation, or forced submission compared with 33 percent resolved by force in the later period. He states:

> What is particularly significant in the latter period is the large number of "passive" settlements and voluntary withdrawals, conflicts which have never been resolved by formal agreement or in which one or both parties quietly withdrew from a geographic or diplomatic position, usually without making a formal agreement or settlement.[3]

If this trend continues, we may expect to see many more conflicts that are resolved neither by clear-cut victory nor by formally negotiated settlement. The war that fades away or which results in an implicit *modus vivendi* may be the most familiar pattern for the future.

Domestic Considerations. It would be improper to conclude a discussion of limited war without mentioning the importance of domestic politics in determining what can and cannot be done. I think that the example of the Vietnam war is sufficiently vivid that I do not need to argue this point.

It seems to me that the lesson which must be learned from our recent experience is that it is very difficult, if not impossible, for democracies to pursue long, costly, and inconclusive wars. Yet I argued earlier that the circumstances which precipitate conflict will not go away just because we wish them to. The answer, I think, is that we must be very careful about the way in which we get involved in armed conflict. There would seem to be two ways in which democracies can fight a limited war: one is the short, sharp war with a clear-cut purpose which can command popular support; the second is the low-visibility conflict in which the level of effort is sufficiently limited that most people are unaffected. If we can achieve our purpose in a conflict through one or the other of these strategies, then it may be a war worth fighting. If we cannot, then the costs of the war—and these must include political and social costs, as well as military costs—are quite likely to be too high.

I am not optimistic enough to think that we will be able to avoid having to fight wars. On the other hand, in a thermonuclear world the only kind of a war which can make sense is limited war. We must, therefore, be continu-

[3] K.J. Holsti, "Resolving International Conflicts," *Journal of Conflict Resolution*, September 1966, p. 284.

BIOGRAPHIC SUMMARY

Comdr. James A. Barber, Jr., U.S. Navy, did his undergraduate work in economics at the University of Southern California. He holds an M.A. in economics from Vanderbilt University and an M.A. in international relations and a Ph.D. in political science from Stanford University. His primary operational experience has been in destroyers, most recently as Executive Officer of the U.S.S. *Henry W. Tucker* (DD 875) and as Commanding Officer of the U.S.S. *Hissem* (DER 400). Commander Barber is currently serving as Plans Officer on the staff of the Naval War College.

ously aware of the requirements to keep conflict limited and must be willing to limit both our objectives and the means we use to achieve them. This should not be confused with either gradualism or defeatism but is rather a careful calculation of costs and risks against what is to be gained. With a moderate amount of care and wisdom it should be possible to keep from being *either* Red or dead.

Ψ

The annihilating character of these agencies may bring an utterly unforeseeable security to mankind . . . It may be . . . that when the advance of destructive weapons enables everyone to kill everybody else no one will want to kill anyone at all. At any rate it seems pretty safe to say that a war which begins by both sides suffering what they dread most—and that is undoubtedly the case now—is less likely to occur than one which dangles the lurid prizes of former days before ambitious eyes.

Winston Churchill: To the House of Commons,
3 November 1953

The basis of a nation's capability to exert power is found in its national cultural characteristics—people are the "heart," the "nerves," the "emotions," the "intellect" that create power. In evaluating these characteristics, one must consider them not in light of an arbitrary scale of values favorable to a particular culture, but in light of the values and environment of the subject culture. The failure to do this has often resulted in erroneous estimates, the inadequacy of which has been ascribed to irrational behavior.

NATIONAL CULTURAL CHARACTERISTICS AND NATIONAL POWER

An article

by

Professor Clyde B. Sargent

Chair of Comparative Cultures

The word "culture" has several meanings. Sometimes it is written with a capital "C," sometimes with a small "c." When written with a capital "C," Culture means everything that you and I regard as good, correct, and gentlemanly. An acquaintance of mine quips that "Culture" represents "indoctrination in prejudice" and includes what "nice" people believe and do. When written with a small "c," culture refers to patterns of learned behavior shared by a particular group of people over a particular time. For the purpose of this article I wish to discuss culture with reference to the latter definition.

There are many basic similarities among *all* people—similarities in fundamental interests, in basic human objectives, and in basic institutions. The differences commonly observed represent differences in the methods of pursuing four very basic goals—security, productivity, harmony, and dignity. Differences in culture are normal, desirable, and appropriate. These differences include different methods of thought, decisionmaking, and action.

Every cultural system is valid within the environment within which it developed. Cultures cannot be *simply* compared or *comparatively* evaluated. Cultures are not comparable. Each culture was created out of a *unique* set of circumstances to accomplish the objectives of one people. Each culture is or was superior for *that people* with *those goals* in *those circumstances* at *that time*. A particular culture would be unsuitable for another society, and another society's culture would be less useful for it. Therefore, we may not grade and compare cultures as superior or inferior. We can say only that certain

cultures are or are not effective in the pursuit of the society's selected goals. Many people grossly err by comparing cultures on the basis of *selected criteria* favorable to one culture or another. Is chess a better form of recreation than golf? This question is unanswerable; it depends upon what you want to accomplish. What is the best restaurant in town? The answer depends on your desires and tastes. Cultures can be evaluated only in terms of their own values and goals.

Culture comprises all of the things, both material and intangible, that man has created to assist in pursuing his basic objectives. In addition to his material creations for comfort and production, culture includes forms of communication, man's beliefs, his values, the way he behaves, his organization of society, the determination of "rules" for the functioning of society, protocol, and a variety of institutions. It includes language, thought and philosophy, fears and confidences, aspirations and goals, and certainly views of oneself, the world, and one's role in it.

Cultures develop from three primary sources: (a) cultural heritage and tradition, (b) environment, and (c) historical experiences. Cultures reflect the way people cope with these forces as they seek security, prosperity, harmony, and dignity. A long history of isolation will produce attitudes in a people quite different from the attitudes of a people constantly threatened by attacks on their borders or continually engaged in trading activities. The physical hardships of North American colonial life in the 17th century produced cultural values and attitudes that today's more prosperous society rebels against. Another important ingredient in the creation of culture is the periodic appearance of a sage, of several in sequence, who synthesize experiences and vocalize for the people a system of philosophy—such as a Buddha, a Confucius, a Jesus, a Mohammed, a tribal sage, or a Mao Tse-tung.

Just as people create culture, so culture molds the personality and character of the people under its influence. I resemble a North American *not* because my parents were North Americans, but because I was raised in North America and molded by the values of this society. Had I had the same parents but been raised within the society of China, England, or the Aretic, I should behave like a Chinese, an Englishman, or an Eskimo.

Cultures impose upon all of their members massive, intense, and continuing "brainwashing" to mold and shape thoughts and feelings. From birth until death our cultures are molding us. The agents of culture who influence us are our parents and families, our playmates and peers, our teachers, the social group with which we associate, our churches and religious systems, our professional group, and the state. We cannot escape. We are induced to conform, to behave and think like other people of our culture. And then, in turn, we do the same with our children.

Culture is learned, patterned behavior shared by a large number of people and communicated generation after generation—learned from predecessors and transmitted to descendants.

Cultures determine and define the values, the standards, and the modes of behavior in which people are indoctrinated. Cultures define acceptable behavior on the part of their members. The total of cultural values defines the framework and parameters within which a people *think, make judgments, make decisions,* and *behave.* People usually are unaware of the influence of these values.

Time, social change, the growth of knowledge and technology, and the introduction of new goals create obsolescence for every culture. Cultures cannot be static, cannot stand unchanged. Culture is, in some ways, essentially a

"problem-solving" device. It is a people's system for creating and maintaining a desired social order. The solution of problems creates other problems, and cultures and societies must develop new methods for new problems.

Wherever we look today in the world, we see change. The tremendous increase over recent decades in knowledge, technology, interpersonal and international relations, human socialization within cultures and among cultures, and ideological concepts has created such a dynamic drive for change that most vital cultures in the world today are in the throes of upheaval. Not only China, but most of the rest of the world is involved in a dynamic Cultural Revolution. This is very notably true in the United States.

It is inevitable that any given cultural system will become obsolete if society is alert and dynamic, and every cultural system becoming obsolete must struggle for new perspectives and new values to solve new problems. Our old cultures were not geared to handle our new problems. Moreover, with the need for change, every people is faced with the need to surmount the resistance of tradition and familiar ways. Cultures for suitable living, satisfying in the past, must be modernized in order that we may have new cultures suitable for satisfying living in this century and the next.

We tend to think of "culture" and "nation" as synonymous. However, culture is not necessarily synonymous with "nation"or with "society." A culture may encompass more than one nation—as "Eastern culture," "Western culture." "Latin culture," or "Moslem culture," "Buddhist culture," and "Christian culture." Culture may relate to people who are less than a nation or society—as "southern culture" or "black culture." Culture may encompass *segments* of populations of numerous nations and societies—as "youth culture." We might even speak of an international "Navy culture." People may be "sliced," as it were, in different ways and grouped by a sharing of dominant traits and values; each group, in effect, represents a "culture."

Popularly we equate "culture" and "nation"—as "French culture," "Chinese culture," or "Russian culture." But within each nation there is great diversity, and in generalizing about a national culture we must admit many variations. We recognize what are called "subcultures." Nevertheless, for convenience we can speak of "national cultures" and "national culture values."

An understanding of culture provides insights essential for effective international relations. A major element of culture, of course, is people and their motivations. The dominant values and characteristics reflected by large segments of the population are called, by UNESCO, national culture values. The product of these values is national character.

I venture into this topic with an awareness of controversy and a recognition that there is no decisive consensus regarding the nature, value, or even existence of national character. It is my view, however, that the concept permits us to focus upon and understand the attributes of the people of the various societies in a way not otherwise possible. And in our world affairs today we need every tool of comprehension.

These are my views—influenced by many scholars, shared by some, denied and rejected by others. Do not accept them because they are expressed here. If these views broaden your insights in understanding people and nations, use them. If they confuse or seem esoteric, then set them aside. I hope these views will suggest tools by which we can better understand people and can increase our effectiveness in intercultural and international relations.

You have no doubt considered national power from various perspectives. Many considerations are used in

evalnating a nation's power, but one factor remains clear. People, exerting and expressing power, are the primary and ultimate sources of a nation's strength. People are the *heart* and the *nerves* and the *emotions* and the *intellect* that create expression of power. Only people can activate material resources for power. The effectiveness of a nation's power depends *not* primarily on material instruments, *but* on how people use the instrnments. A nation may possess instruments of power, and its people may use them; this nation expresses power. Or a nation may have the instruments of power but chooses not to use them; this nation does not exert power. We frequently speak of a nation's "intentions and capabilities." "Capahilities" refer principally to a nation's material assets for power. "Intentions" relates primarily to the desires and will existing within the people.

Scholars and strategists often identify "the elements of national power," and they admit *people* are a significant element of power. Hartmann, speaking of the power of nations, refers to "the behavior patterns of nations" and includes people in his fifth element of national power as "psychological-social." Mahan includes "the character of people." Farragut stated, "One of the requisite studies for an officer is *man.* Mao Tse-tung is unrestrained in his emphasis upon the importance of people, stressing that people are more important than all the sophisticated institutions and hardware of modern societies.

Although we consider people as an element of national power, we often do so only in a quantitative sense. We count them and evaluate their job skills in terms of warmaking capability. This is not sufficient, for people are different in other ways. The forces that motivate them cannot be assessed statistically, nor interpreted by criteria suitable for assessing the American people.

Not all of the components of power are relevant in each and every case of power evalnation. Rich natural resources or navigable rivers may or may not be present. People are the sole (one and only) *sine qua non* of power. Thus, we need to increase our understanding of people, and we need to identify their role in the use of the instruments of power. This involves the study of cultures.

If people are the *heart* and the *key* to power, we must, as far as possible, analyze, evaluate, and determine the crucial and core element of *people* as the principal force of power. This is extremely difficult for people, as individuals and as groups, are complex. They reflect great variety. In addition, we are not certain of the attributes of people that are significantly related to power. It is even possible that these attributes can differ from culture to culture.

Characteristics of people cannot be quantitatively or qualitatively *measured* and expressed *statistically.* Evaluating human characteristics cannot be turned over to computers; this task must be tackled with the resources of human intelligence, imagination, insights, and experience. Estimates of the relation between cultural characteristics and the capacity for expressing power require (as in most professional activities) persons with certain aptitudes.

Perhaps the most important of these is intellectual empathy, the capacity to see the role, function, and suitability of beliefs and practices that may not make sense or be acceptable in our own society. Also necessary is a disciplined imagination that can see beyond the impersonality of statistical data and facts and grasp the human factor.

In simple terms, Chet Huntley, in one of several "swan songs," reflected this accomplishment when he wrote, "I believe I have been able to work the necessary transformation of mind, and to undertake the required purge of

prejudice to the end that I can advance to every other fellow person the assumption that he possesses sensitivity and human dignity."[1]

But, even as students of the nature of power, we must live with our dilemma. We must pursue, with the best of knowledge and insights we can acquire, our understanding of people. Even though we cannot identify and statistically measure "people power," we know that it exists. We are dealing with unmeasurables. We cannot mathematically represent love and hate, courage and cowardice, confidence and fear, optimism and cynicism, national patriotism and local provincialism. But we know that all these characteristics of people exist, and we need to consider them. Similarly, with "people power" as a whole, though often we cannot represent it mathematically, we know that "people power" is a controlling force, and we need to evaluate it to the best of our ability. This involves a study and analysis of cultures.

At the level of the nation, these patterns of national culture values often are called national character. I hold that the concept of national character is valid even though we cannot measure it statistically. We continue our search for understanding. Similarly, we must continue our quest to understand national character; only as we increase our knowledge can we understand the prime role of people as determinants of national power.

National character is a working hypothesis. That we do not amply understand it does not negate its reality. Research tends to demonstrate that nations do have both uniqueness of character distinguishing them one from another and similarity of character shared by most nations.[2] Our concern for national character must encompass *our own* culture and nation. Most of us are not very aware of "what makes us tick" as a people, of why we behave as we do, or why we have certain beliefs, attitudes, motives, and goals. This awareness is essential, for an understanding of national character becomes meaningful and purposeful when we observe interaction between and among cultures. Only by understanding our own character can we understand the essentials of another culture or nation and the experience of interaction between our nation and other nations.

What is national character? My own definition, at this time, is that national character is: One or several distinguishable mosaic patterns of human, cultural, and personal/psychological (especially motives) *attributes, widely possessed* by significant proportions of the population, having a degree of durability or continuity, that *tend to determine* behavior or action as a *nation.*

The attributes include intellectual, physical, and emotional characteristics (including attitudes, aspirations, motives, and culturally created human and social values).

Before working with this definition, we must note that national character is *not* computed by identifying the significant attributes of a large number of the people and multiplying by the population. Two characteristics of populations dictate this caution.

First, the national character of a *people* may differ from the national character of a *nation.* The leadership may create a national attitude and a national character that differs from the

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[1] *TV Guide*, 1-8 August 1970, p.8.

[2] Hundreds of studies—scientific, intuitive, and otherwise—related to national character have been done over the past 30 years by anthropologists, political scientists, psychiatrists, psychologists, sociologists, and others. A splendid survey of these studies is reported by Alex Inkeles and Daniel J. Levinson in "National Character: the Study of Modal Personality and Socioeultural Systems," in *Handbook of Social Psychology, Vol. IV, Group Psychology and Phenomena of Interaction* (1969), p.418-492.

character of the people as a whole. Also, people acting in groups often act differently than they would as individuals. Consider the example of the looters in the Detroit riots of 1967 who later returned their loot, and the vandals at the Sino-Soviet Institute in 1969 who later volunteered apologies.

Furthermore, as provided in the definition above, national character may consist of several *distinct* but *overlapping* patterns of attributes. These reflect distinctive groups of people within the society, all having much national culture in common, but each having attributes of distinct diversity. This is true for even small countries as, for example, Belgium. Certainly in all nations there are distinctions between urban and rural, between "white collar" and "blue collar," perhaps between coastal and hinterland.

A study of national character does not imply evaluation or comparison of merit. The national character of a people or of a nation is a creation of that culture. National character reflects attributes that society created to cope with environment and to pursue desired goals. Thus, the only acceptable evaluation of a national character is in terms of its perceptions of its environment and its goals. Attributes of national character might be utterly unsuitable in another society. Should the environment or goals of a society change, its attributes of national character may no longer be suitable for it. Mainland China today is a good illustration of this. In conclusion, the national character of a people can be evaluated only in terms of *their* culture and *their* goals. If, at any given time of evaluation, a society's national character for coping with environment and pursuing goals seems unsuitable, this unsuitability probably is due to the fact that environment and goals have changed, but the elements of national character have not adjusted to the new situation.

Self-evaluation by a nation of its "national character" at every given time is, however, of great importance *to that nation.* Many tragedies to nations have occurred because of an insufficient awareness *by those nations* of the "national character" of their own people. I suggest that much of the unrest and turbulence in nations today is related to insufficient self-understanding. The United States is outstanding among nations that have failed to appreciate their national character. Much that we see today in the way of turmoil, confrontations, accusations, and recriminations reflects the United States in the agonizing and tortuous ordeal of "deep soul-searching." Self-evaluation is an imperative process for each nation as it seeks to maintain its

BIOGRAPHIC SUMMARY

Professor Clyde B. Sargent completed his undergraduate work at Denison University in political science in 1930 and a master's degree in English at Trinity College in 1932. He then took a master's degree in Chinese language and civilization from the College of Chinese Studies in Peking and taught for 6 years as Chairman of the Foreign Languages Department of Cheloo University in Tsinan, China. During the war years, Professor Sargent served as a special assistant to the American Ambassador in Chungking and as a major in the OSS. In 1946 he returned to the United States and completed a doctorate at Columbia in Far Eastern studies. Since that time Professor Sargent has served in a variety of positions, including Political Advisor to the U.S. Delegation to the United States-U.S.S.R. Joint Commission on Korea (1947-1948), Director of Foreign Area and Language Training with the U.S. Government (1948-1965), and Professor of History with the East Asian Institute, Oakland University (1966-1967). Professor Sargent is presently occupying the Chair of Comparative Cultures at the Naval War College and serving as lecturer for The George Washington University graduate program there.

social order and pursue national goals. Self-evaluation is also imperative as a nation evaluates its national power *vis a vis* other nations.

How is national character created? The basic forces molding national character are: (1) physical environment, (2) cultural heritage (accumulative), and (3) historical experiences. Pressured by the influence of these three forces, men seek to develop a satisfying physical existence and meaning in life. These generally universal desires of all men are reflected in human goals generally pursued by all men, regardless of when and where they live in the world.

People in different parts of the world have created different ways to pursue common goals and solve problems. This is why we have differences among people. Social structure, values, beliefs, and patterns of behavior are all devices created to pursue goals and solve problems. These all contain the elements of national character. These are the things we must understand if we want to know how a people are likely to behave in given situations.

The challenge to all who would understand the nature and force of national culture values is difficult. We have a problem of perception and a problem of interpretation. The problem of perception is our need to climb out of our vision and perception conditioned by our American "culture training" and try to see the world as our target cultures see it. The actions of a nation or a people are determined by their concepts and perceptions, not ours. Most people "act rationally." If behavior appears to us to be "irrational," usually we are judging others' behavior by American norms and overlooking the perspectives and values of the people whose behavior appears irrational. These can be fatal faults.

In conclusion, national culture values are complicated. They are illusive. They are continuously changing. There are many variables. An approach to understanding is hard work—intellectual and psychological. However, insofar as we can develop insights, we can better manage our own national affairs and increase the sophistication of our involvement in intercultural and international affairs.

Ψ

A military philosophy and that somewhat more tangible thing—a military policy—are the product of many factors. A philosophy grows from the minds and hearts, social mores and customs, traditions and environment of a people. It is the product of national and racial attributes, geography, the nature of a potential enemy threat, standards of living and national tradition, influenced and modified by great military philosophers like Clausewitz and Mahan, and by great national leaders like Napoleon.

Hanson W. Baldwin:
In "The New York Times," 3 November 1957

U.S. OCEANIC PROGRAMS AND POLICY

In the past the U.S. Navy and Coast Guard have borne a major share of the responsibility for oceanographic research and the management of U.S. coasts and lakes. There are a number of Federal civilian agencies which also have responsibilities in this area, and in recent years they have been receiving a proportionally greater share of the available funding. The proposed establishment of a National Oceanic and Atmospheric Agency and an Environmental Protection Agency will augment this trend toward civilian predominance in oceanic research. It may also encourage additional basic research to complement the present emphasis on applied research in Continental Shelf areas.

A lecture delivered at the Naval War College

by

Mr. A. Denis Clift

Substantial advances are being made in U.S. oceanic programs and policy; in fact, the U.S. ocean program has been in a state of healthy growth since the early 1960's. Decisions are now pending on highly important national and international marine science issues; equally important issues are unresolved. The issue of Federal marine science organization, for example, of intense interest to the U.S. ocean community, is presently receiving the earnest attention of the executive branch and the Congress. The law of the sea, rules for the exploitation of seabed mineral resources, and a seabed arms limitation agreement are subjects of debate in the United Nations and other intergovernmental forums. At the same time, as important as oceanic affairs may be, they are in sharp competition for Federal attention and funding with other pressing national business.

Considering the evolving and flexible nature of the U.S. program, I shall not presume to delineate a single national plan of action. Rather, I would like to identify significant trends in Federal marine sciences policy and support—including the place of the Navy's marine science activities—and to relate these trends to the present state of development of the U.S. ocean program.

The global setting for the Nation's oceanic activities finds us at a point in time when politically, militarily, and economically the nations of the world are intensely interested in national rights and international obligations relating to the oceans, their seabeds, and their resources. At a time of growing economic and social needs, man continues to increase his capabilities to work in the sea. The United States alone has drilled more than 15,000 offshore

wells, and we can continue to expect marked improvements in offshore technology.

The recent Law of the Sea Institute Conference at the University of Rhode Island was devoted to "The United Nations and Ocean Management," reflecting the major attention that ocean issues have been given in the United Nations since the mid-1960's. The vision—albeit premature—of revenues from internationally administered seabed mineral resources has worked a catalytic effect in the General Assembly, the developing nations determined to resolve this issue to their best advantage.

In the Conference of the Committee on Disarmament—formerly the 18-nation Disarmament Committee—the United States and the Soviet Union have for nearly 2 years been leaders in an international effort to draft an international agreement prohibiting the emplacement or fixing of nuclear weapons or other weapons of mass destruction on the seabed. Such an agreement would assist in precluding nuclear arms competition on the seafloor and thus contribute to strategic arms limitations generally.

We are at a point in time when seaward claims to national jurisdiction are being advanced by several nations; a point a time, if you will, when a political chapeau has been placed over formerly separate functional areas of international ocean activity—fishing, naval operations, scientific research, and oil and gas exploitation.

Most recently global concern about the quality of the earth's environment—the likening of the earth to a spaceship with limited life support systems—has become a significant factor in oceanic affairs. During Thor Heyerdahl's first attempted voyage across the Atlantic in the papyrus craft *Ra* he expressed dismayed disbelief at the quantity of man's rubbish encountered in midocean. Nationally, we have become aware of the degradation of inland and coastal waters that can result from agricultural runoff and industrial and municipal wastes. The losses of the *Torrey Canyon*, the *Ocean Eagle*, and other tankers and the oil spills from offshore wells have become matters of international concern. The concept of the oceans as an infinite sink for the castoff by-products of human activity is becoming less and less acceptable—as evidenced, for example, by Canada's recent enactment of legislation claiming jurisdiction for purposes of pollution control from the coast seaward over a 100-mile zone.

The United States, as a world leader in marine science and technology, has had considerable effect on what is transpiring internationally. One need only recall, for example, that it was the U.S. delegation which introduced a resolution adopted by the U.N.'s Economic and Social Council in March 1966, requesting the Secretary General to survey the present state of knowledge of marine resources and to identify those resources capable of exploitation, especially for the benefit of developing countries. The development of a strong ocean program in the United States was, of course, well underway before this current period of intensified international interest.

Federal support for the marine sciences, or oceanography as it was then known, was stimulated by the experience gained from naval operations of World War II, during which it had become quite clear that the Navy would have to have a greater knowledge of oceanic characteristics and processes for effective operation of its submarine, surface, and air units. Federal funding to the Navy and other agencies was devoted in large part to underwriting basic scientific research to permit the development of an enlarged base of oceanographic knowledge.

The Soviet space accomplishments of the late 1950's led to increased U.S. attention to science and technology,

including the creation of the Federal Council for Science and Technology in 1959. The Federal Council established an Interagency Committee on Oceanography to coordinate the multiagency Federal ocean program, an expanding program which in the early 1960's encompassed basic and applied research, surveys, ship construction, and the development of marine facilities.

In 1966, largely as the result of congressional interest and effort, Federal attention to the oceans advanced from the program to the policy level. The Marine Resources and Engineering Development Act, passed on 17 June 1966, declared it to be a policy of the United States "to develop, encourage, and maintain a coordinated, comprehensive, and long-range national program in marine science for the benefit of mankind." The act assigned responsibility to the President to provide the Nation's oceanic activities with leadership and direction; created an interim Cabinet-level, Marine Sciences Council chaired by the Vice President to help set goals and strategies; and established a public advisory Commission, the Commission on Marine Science, Engineering, and Resources, to recommend a national ocean program capable of meeting present and future needs.

In January 1969 the Commission delivered its report, entitled "Our Nation and the Sea," to the President and the Congress—the report containing more than 120 recommendations in the fields of marine research, technology, resource exploitation, and Federal organization. With regard to the latter, the Commission proposed that an independent agency—a National Oceanic and Atmospheric Agency, or NOAA, be established to report directly to the President and to give the civil sector of the Federal program the critical mass required for the Nation's oceanic business—bringing under the same roof the Coast Guard, the Bureau of Commercial Fisheries, the Environmental Science Services Administration, the U.S. Lake Survey of the Corps of Engineers, the National Sea Grant Program, and the National Oceanographic Data Center. The Commission, in keeping with the provisions of the Marine Sciences Act, went out of existence 30 days after the completion of its assignment.

Shortly after he entered office, President Nixon asked the members of the Marine Sciences Council for their views on the Commission's recommendations. And in May 1969 he directed the Chairman of his Advisory Council on Executive Organization to evaluate the NOAA proposal in the broader context of its overall review of Federal organization. The Ash Council, as it is known after its chairman, Mr. Roy Ash of Litton Industries, delivered its recommendations to the President shortly thereafter, and on 9 July the President announced that he was sending to Congress two reorganization plans which implemented the recommendation of the Commission of Marine Science. At the same time, planning and the development of marine science policy continue in the Marine Sciences Council.

The Council and its Assistant Secretary-level Committee for Policy Review seek to mobilize the marine science resources of the 11 Federal agencies with marine science interests into a coherent, multiagency framework—to identify needs, impediments, and opportunities; to recommend lead-agency assignments for Federal planning and implementation of programs cutting across several agencies' responsibilities; to assure that there is a match between goals and resources—in sum, to produce a whole which is greater than its parts.

The need to match goals to resources is, of course, of paramount importance. As a Nation we are in a period of "tight money." In the words of Herbert Stein, a member of the President's Council of Economic Advisers:

> We hear much talk of national priorities. Almost invariably this means only that somebody wants more of something. It almost never means that someone has surveyed the alternative uses of the national output and decided what is best to have less of as well as what is best to have more of. If we continue to press more and more claims upon the national output, if we are unprepared ever to say no, the necessary task of saying no will be done by inflation, haphazardly and unfairly.

As many of the Nation's program budgets reflect, the President has been willing to say "No," as required. In the marine sciences, however, the President's budget request for Fiscal Year 1971 shows an overall increase of some $20 million over Fiscal Year 1970—from $514 million to $533 million. And, in the marine sciences, choices have been made.

Marine programs in the Nation's coastal margins have been singled out for emphasis, in recognition of the fact that increasing pressures of multiple use are being brought to bear on the U.S. coastal counties, shorelines, and coastal waters. The U.S. population is migrating to the coasts. Uses of the coastal zone—be they for recreation, wetland preserves, waste disposal, industrial parks, urban developments, mining, power plants, or commercial fishing—are in competition for limited space.

A new Federal policy is being proposed to encourage States to improve their management of coastal areas and the Great Lakes, with a grant program to aid States to plan and manage coastal activities. To this end, the Department of the Interior, on behalf of the administration, submitted a legislative proposal to the Congress in November 1969 providing for the establishment of a national policy for the development of coastal areas and authorization of Federal grants, with matching State contributions, to encourage and facilitate the establishment of State planning and regulatory mechanisms. Such legislation should assist in insuring that rapid coastal development does not destroy limited coastal land and water resources and that all interests in the coastal regions will be assured consideration. The Senate Commerce Committee's Subcommittee on Oceanography has been holding hearings on this legislation.

Rational management decisions on the use of the coastal zone should be predicated on the best possible scientific information as to the effects of man's activities on the coastal region. The relationship of these effects to economic and social factors should be known, and methods should be available both to forecast and monitor these effects. The administration's legislative proposal for coastal zone management requires that States' management plans provide for the availability of management-oriented coastal zone research.

Planning is under way under the Department of the Interior's leadership to identify the needs and to assess the adequacy of existing Federal, State, and other institutions to provide the required research. Specific attention is being given to determining how existing capabilities can be better utilized and how this research can be used by States in improving their management of coastal zone resources. This will include an assessment as to whether or not we require new facilities and, if so, how they should be funded.

The Department of the Interior has been assigned lead-agency responsibility for a pilot demonstration of lake restoration with $1 million included in the FY 71 budget request of the Federal Water Quality Administration for this purpose. FWQA has several related projects in the environmental quality field, and in planning this pilot project consideration is being given to

techniques which will be applicable to larger bodies of water such as the Great Lakes. The President has proposed legislation that would stop the dumping of polluted dredge spoil into the Great Lakes and has additionally charged his newly established Council on Environmental Quality with recommending steps to combat problems posed by ocean dumping.

Increased support is being sought for the Sea Grant program administered by the National Science Foundation—a program emphasizing the development of resources of the marine environment through applied research, education and training, and advisory and extension services.

Since the program's establishment in 1966, eight universities—Rhode Island, Miami, Michigan, Wisconsin, Texas A&M, Hawaii, Oregon State, and Washington—have been awarded Sea Grant institutional support for the conduct of broad-based, multidisciplinary programs. Institutional support programs emphasize development of regional capabilities to solve regional problems and participation by State and local governments and industry. In addition, some 200 individual Sea Grant project awards have been made to other universities, colleges, junior colleges, and technical institutes for curriculum development, technician training, and studies of aquaculture, ocean engineering, marine mineral development, and ocean law.

Sea Grant funding has grown from $5 million in fiscal year 1968, the first full year of operation, to $9.6 million in fiscal year 1970; and the President's budget request for the coming year includes $13 million—particularly to support coastal zone research.

Because of the Arctic's overall significance and resource potential, Arctic environmental research was another marine science area selected by the President for priority attention in FY 71. Several Federal agencies are planning to expand or mount efforts of varied scope and intensity in fields including engineering, meteorological and environmental research, resource assessment and development, health and welfare, and Arctic transportation. The National Science Foundation has been given the lead-agency responsibility for Arctic research programs. Of the $2 million requested for new Arctic programs by NSF in support of the Arctic initiative, $1.2 million would be funded for marine-related activities. Major objectives of the Arctic program include:

- Investigations of the polar icepack, including its effect on transportation and global weather, its interaction with coastal installations, and its impact on coastal ecology;
- Study of the polar magnetic field and its effect on communications;
- Investigations of geological structures underlying the Arctic lands and polar seas as both potential mineral sites and hazards to construction and resource development;
- Comprehending the balance of the Arctic ecosystem; and,
- Experiments on the degradation of liquid and solid wastes under Arctic conditions. Additional funding is being requested by the Advanced Research Projects Agency of the Department of Defense for the development of an Arctic surface effect vehicle.

Another significant increase is in the budget request of the Department of Transportation where an additional $7.2 million is provided for the advanced development stage of the Coast Guard's National Data Buoy System.

The administration believes that cooperative marine sciences research, providing the nations of the world with a foundation of fundamental knowledge, will be essential to better future use of the world ocean. To this end, in 1969 the President approved U.S. participation in the International Decade of Ocean Exploration; the National

Science Foundation has been designated lead agency; and $15 million has been included in the NSF budget request for initial U.S. Decade programs. These programs will place emphasis on preservation of the ocean environment by accelerating scientific observations of the natural state of the ocean and its interaction with the coastal margin; improved environmental forecasting; seabed assessment to permit better management domestically and internationally of seabed mineral resource exploration and exploitation by acquiring needed knowledge of seabed topography, structure, and resource potential; and improved worldwide data exchange.

Internationally the Decade has been endorsed by resolution of the United Nations as part of an expanded international program of oceanic exploration and research, and the U.N. has given the Intergovernmental Oceanographic Commission of UNESCO the task of planning the international program.

Briefly then, these are the areas of policy and program emphasis; I am sure you have detected the emergence of some rather clear trends. First, marine science programs receiving strong support are aimed at the solution of practical problems of priority interest to the United States. Basic oceanographic research, of course, is still needed, and support for such research will continue. Present emphasis, however, is on applied research. Secondly, and in keeping with the first trend, priority support is being given to programs off our own coastlines and concerning the U.S. Continental Shelf. Most of our present oceanic pollution problems are in these areas; heavy shipping follows the coastlines, the recovery of seabed minerals is largely from inshore waters, and some 90 percent of U.S. commercial fisheries are within the bounds of our Continental Shelves.

Still another related trend is that of increased funding for the marine programs of civilian agencies. For the first time since the present scope of the marine sciences program was defined in 1966, funds for the civilian agencies are more than half of the marine sciences budget request—which brings us to the place of the Navy in the Federal marine sciences program.

The Navy is, of course, the strongest, ablest marine sciences participant in the U.S. ocean program and has been since the days when Lieutenant Maury first offered shortcuts on his wind and current charts to enterprising masters of square-riggers. Today, the Navy's marine science program includes the science, technology, engineering, and operations which are required for use of the marine environment to enhance national security. The national security portions of the President's FY 71 marine sciences

BIOGRAPHIC SUMMARY

Mr. A. Denis Clift is a graduate of Stanford University (1958) and holds a master's degree in international politics from the London School of Economics and Political Science (1967). As a Naval Reserve officer he served on active duty from 1958 to 1962, including a tour of duty in Antarctica with Operation Deep Freeze. Upon his release from active duty, Mr. Clift joined the staff of the *Naval Institute Proceedings*, serving as editor of that publication from 1963 to 1966. Following a year of graduate work in London, Mr. Clift entered the executive branch of the Federal Government on the staff of the interagency Committee on Marine Research. In November of 1969 he became the Executive Secretary of the National Council on Marine Resources and Engineering Development Committee for Policy Review. In this capacity he evaluates the importance of national oceanic issues and develops recommendations for consideration by the Cabinet-level Council.

budget request are down some $13 million from last year—a minor amount, perhaps, when compared to overall budget cuts of more than $5 billion the Navy has experienced since 1968—but an amount which has involved a slowing down of certain portions of the Navy's program. In mapping and charting, for example, old fleet survey ships are being retired well before their replacements, now under construction, are put into commission. In the deep submergence program, R&D funds for Deep Submergence Search Vehicle planning are being stretched from FY 70 to FY 71. Funding for Antisubmarine Warfare Environmental Prediction (ASWEPS) has remained level from FY 70.

Navy support of the national program continues, tempered by section 203 of the Military Procurement Authorization Act, approved in November 1969—and known as the Mansfield amendment—which states: "None of the funds authorized to be appropriated by this Act may be used to carry out any research project or study unless such project or study has a direct and apparent relationship to a specific military function or operation."

With regard to pending organizational decisions, whatever they may be, we can assume—as did the Marine Sciences Commission—that the Department of Defense, and more specifically the Navy, will continue to have a major marine sciences role in support of its national security mission.

In recent years the United States has moved the focus of primary attention from the expansion of its oceanographic research capabilities to the development of marine technology, to the major problems which confront us today: rational management of our 17,000-mile coastal zone; restoration of our lakes and solutions to the problems of marine pollution; careful development of Arctic resources; international cooperative marine research which will provide the basis for peaceful development of deep seabed resources—multidisciplinary problems involving scientific, legal, and political considerations.

In the near future, arrangements for the civil sector of the Federal marine science program hopefully will enable it to manage the challenging tasks which properly are its responsibilities. The objective is a balanced marine sciences program—a prospect to be welcomed by the Navy.

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Our Navy has led us to a great beginning in oceanography. But it is now up to the nation, to our total scientific, industrial and military establishment to carry on and make the most of this beginning.

Roger Lewis, President, General Dynamics,
to the National Press Club,
27 October 1965

In order to determine the feasibility of an all-volunteer officer corps in the absence of a draft, a group research project at the Naval War College examined the attitudes of college youth toward military service. They concluded that the draft provides the major incentive for first-term officer volunteers in all services and that without a draft it will not be feasible to obtain a sufficient supply of qualified officers to maintain a 2.5 million man force.

THE OFFICER CORPS IN AN ALL-VOLUNTEER FORCE:

WILL COLLEGE MEN SERVE?

A Group Research Project

by

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For those interested and involved with national security, it is a critical period in time. The whole issue of national defense requirement—how much, what kind, and how much will it cost—has been caught up in the larger issue of the type of society this country sees for itself in the decade ahead. The American public has been made keenly aware of such problems as increased crime rates, deterioration of cities, pollution of air and water, and the continuing unrest on college campuses. A national debate has evolved over the priority national defense should enjoy in relationship to society's social and environmental needs. The war in Vietnam and the operation of the draft have brought into question our existing military manpower procurement policies. These policies have been challenged as archaic and inequitable, and the proposition has been made that the Nation should abandon conscription in favor of voluntary recruitment.

Conscription was introduced to this country during the Civil War—the first conflict that called for the use of large bodies of men over a sustained period of time. It was reintroduced in World War I. With the threat of America's involvement in World War II, Congress enacted the first national peacetime draft on 6 September 1940. This act subsequently resulted in the induction of over 16 million men during the 5-year period of hostilities. At the time of its passage, opposition in the Congress was considerable, and renewal of the act in August 1941 was accomplished by the narrow margin of one vote.

In the post-World War II period, the United States for the first time found itself in a significantly different inter-

national role. National security requirements and worldwide commitments demanded the largest peacetime military force in the history of the Nation. The administration requested Congress to extend the Military Training and Selective Service Act of 1940. The legislation was extended to 31 March 1947, but upon the recommendation of President Harry S. Truman, Congress permitted the act to expire.

During this period, from March 1947 to March 1948, the United States experienced its only true volunteer armed force in an environment of extensive peacetime military commitments. Attention was directed to enhancing the image of the Armed Forces and making service life more attractive to the youth of the country. Innovative steps were taken to improve the living, working, and training conditions of men in service. The Army spent $20.5 million for recruiting in an effort to induce eligible young men to volunteer. Despite these concerted efforts, the Army fell more than 20 percent below minimum manpower goals. President Truman ended the experiment on 17 March 1948 and asked Congress to enact universal military training and to reenact Selective Service. Congress rejected the request for universal military training but acceded to his desire for the selective draft. This action culminated in passage of the Universal Military Training and Service Act of 1951 which has been the basis in law for maintaining U.S. military strength for the past two decades.

In 1966 the President and Congress again reviewed the operation of the Nation's conscription laws. The Marshall Commission, appointed by President Johnson, while finding certain inequities in the Selective Service System, rejected the idea that the Nation adopt a voluntary system of manpower procurement because of its inflexibility in times of crises. It is interesting to note that some of the provisions suggested by this earlier commission were the use of a lottery-type selection system, the draft of 19-year olds, and the tightening of student and occupational deferments. Similarly, the Clark Panel, appointed by the Congress that same year, also rejected the all-volunteer concept on the grounds of inflexibility, expense, and lack of a unifying influence on the Nation.[1]

On 27 March 1969 President Nixon announced the creation of an Advisory Commission to develop a comprehensive plan for eliminating conscription and moving toward an all-volunteer armed force as soon as the reduced manpower requirements in Vietnam would permit. The 15-member commission, chaired by former Secretary of Defense Thomas S. Gates, Jr., submitted its report to the President on 21 February 1970. The Commission recommended that the present Selective Service System should be replaced by an all-volunteer force by 30 June 1971, when the present draft law expires. A standby draft system would be required in the event of national emergencies, and that system would be invoked only by resolution of Congress at the request of the President.[2]

A key element to the effectiveness of any military establishment is the procurement and composition of its officer corps, and it is this subject which shall be examined in some depth. Noteworthy is the fact that in recent years the major portion of the officer corps has been recruited from the ranks of college graduates. While it is important to continue to attract college-graduate officers, it is generally acknowledged that without a draft a college-graduate officer corps will be more difficult to recruit. Consequently, crucial to determining the feasibility of the all-volunteer force concept is an examination of the college-trained officer procurement programs currently in being. By far the largest single source of newly commissioned officers for the Army is the Reserve Officer Training Corps (ROTC)

located on college campuses across the country. The Navy relies on its Officer Candidate School (OCS) for the majority of its new officers. In the Air Force, the ROTC and Officer Training School (OTS) programs share equally as the major sources of commissioned officers. Both the Navy OCS program and the Air Force OTS program are composed of college graduates.

During the last few years, a number of schools have either ended their ROTC programs or indicated they planned to phase them out in the future. It is not clear whether these are isolated incidents or the beginning of a trend. However, with advancing weapon systems technology and the complexity of the roles required of officers, it is important that the majority of new officers continue to come from the college campuses. Consequently, the campus-centered ROTC and college-graduate OCS/OTS programs will continue to be the major source of new officers for years to come.

While this may be so, one needs only to read the daily newspapers to be aware of the fact that a social change has been underway on college campuses over the past several years. Campus unrest and disorders have resulted in such acts as the physical takeover of administration buildings and the burning of ROTC offices. These actions are not confined to any particular section of the country, but appear to be widespread. They occur at both large and small colleges, both public and private schools, and involve some of the most prestigious universities in the country.

Much of the unrest and the resulting physical violence have been attributed to youth's hostility toward existing authority, typified by the draft, and sparked by revulsion against the war in Vietnam. Another element that is contributing to campus unrest, and will continue to do so for the next few years, is described by academic officials as a "new breed" of youngsters to whom the traditional campus seems wholly outdated. Dr. Kenneth Hoffman, professor of mathematics and chairman of the commission studying the future of education at the Massachusetts Institute of Technology, conceded: "The change in students during the 1960's was tremendous—yet you wonder what is going to come in the 1970's when you see the pace of change as reflected in our entering freshmen and the unrest in high schools."[3]

While studies have been conducted by various groups concerning the development of a voluntary armed force, they tend to pose the question of professional officer motivation primarily in economic terms. Little has been done by way of measuring the attitudes of college youth toward military service. The question that presents itself is, How deep do these antimilitary feelings run, and how will they affect officer procurement efforts in the future? Specifically, given the current attitudes of college youth toward the military, can the United States expect to maintain an adequate number of college-trained officers in the Armed Forces under an all-volunteer force concept? To answer this question a research project was developed, and a national survey was conducted at the college level.

The President's budget message of April 1969 suggested that active duty force levels would eventually return to pre-Vietnam levels which, for the period FY 61-65, averaged 2.6 million men. The Secretary of Defense gave some indication of postwar force levels in January 1970 when he reported that U.S. treaty obligations will not permit reduction of the Armed Forces below 2.4 million men without a considerable expenditure to maintain a large and modern reserve force.[4] Based on these factors, the study group assumed 2.5 million men to be a reasonable force level approximation upon which to develop officer strength estimates.

TABLE I—OFFICER DISTRIBUTION FOR 2.5 MILLION FORCE AND PROJECTED AVERAGE ACCESSIONS REQUIRED FOR 1971-80 BY SERVICE

Service	Number of Officers	Percent of Total Corps	Aver. Annual Access. 1971-80
Army	101,690	32%	10,800
Navy	69,795	22%	7,300
Marine Corps	16,605	5%	2,000
Air Force	131,602	41%	8,200
DOD Total	**319,692**	**100%**	**28,300**

Source: Office of the Secretary of Defense, Directorate for Statistical Services, "Selected Manpower Statistics," 15 April 1969, p. 19-24; Center for Naval Analysis, "Computation of Officer Accessions 1971-80," Working Paper (Washington: February 1970).

Pre-Vietnam experience indicates that such a force would include approximately 320,000 officers, representing 12.7 percent of the total active duty force. This total would be distributed by service as indicated in table I. Also shown is the estimated officer accessions required during the 1970's to maintain the officer corps strength. These estimates are based on continuation of Selective Service and are computed from anticipated loss rates for all reasons, both voluntary and involuntary.

These data represent requirements which officer procurement programs must satisfy. The projections indicate the Armed Forces will need approximately 28,300 first-term officers annually in order to support a 2.5 million man force. The primary source for meeting this need is the male college graduate.

Officer procurement programs have traditionally emphasized the baccalaureate degree as a desirable requirement for a commission, although each of the services has commissioned officers with less than this level of academic education during periods of mobilization in order to meet minimum officer needs. Approximately 25 percent of the present officer corps are not college graduates (the majority of these officers are products of older programs which required only 2 years of college or in some instances no college at all). The emphasis on college-trained men is reflected by the increasing proportion of officers who are college graduates as demonstrated in table II.

The accelerated rate of change in weapons technology, coupled with the many options available for their deployment, has carried with it the demand for increased numbers of technically and managerially qualified commissioned officers. The impact of battlefield mobility tactics and small-unit independent actions in unconventional ground warfare has created new demands for tactical and technical leadership skills

TABLE II—ESTIMATED EDUCATIONAL LEVEL OF COMMISSIONED OFFICERS ON ACTIVE DUTY BY SELECTED YEARS 1956-67

Educational Level	1956	1960	1963	1967
College Graduate	55%	57%	69%	73%
Some College	84%	90%	93%	91%
High School Graduate	98%	99%	99+%	99+%

Source: Office of the Secretary of Defense, Directorate for Statistical Services, "Selected Manpower Statistics," 15 April 1969, p. 37.

among junior officers. Several analysts have emphasized that military officers must not only possess the traditional military attributes and skills, but must thoroughly appreciate the many aspects of our national, political, economic, and social life. They must have technical competence as well as a broad outlook, judgment, and wisdom.[5]

The demand for highly skilled military officers coincides with the increased complexity of the American economy. The armed services must compete for talent in a highly competitive labor market and must continue to tap those social groups most likely to predispose young men toward a military career. College graduates represent the primary source within American society for providing the quality demanded by the officer corps. It has been estimated that during the 1970's approximately 400,000 male students annually will earn baccalaureate degrees.[6] The ability to attract sufficient numbers of these young men to military service is a prerequisite to an all-volunteer force.

Most officers enter active duty at the ensign or second lieutenant level and receive their initial commission as a result of one of the service-sponsored officer training programs. A brief description of the three primary programs--service academies, ROTC (Reserve Officer Training Corps), and OCS (Officer Candidate School) is necessary for subsequent analysis.

The U.S. Military Academy, the U.S. Naval Academy, and the U.S. Air Force Academy all conduct 4-year courses combining academic and military education and all award a bachelor's degree. The services are currently experiencing a career retention rate of approximately 75 percent among Academy graduates after the initial 4 or 5 years of obligated service have been completed.

For the Army, the ROTC is a major source of new officers each year. There are both 2- and 4-year programs leading to Reserve commissions, although outstanding graduates may qualify for the Regular Army. Navy ROTC is unique in that a distinct part of its "Regular" program provides a sizable number of scholarship-assisted graduates for the Regular Navy. The "contract" programs of NROTC compare to the Army's standard ROTC program. The Marine Corps participates to a limited degree in the Navy ROTC program. Air Force ROTC offers two principal programs. One sponsors academic preparation leading to flying duties as a rated officer, while the other program sponsors students desiring a nonflying duty assignment.

The Army's minimum active duty requirement varies from 2 years for Reserve officers to 4 years for full scholarship holders. The overall career retention rate for Army ROTC graduates averages approximately 25 percent. The Navy requires 3 years' active duty for contract Reserve officers and 4 years for Regular ROTC graduates. Average career retention is approximately 7 percent and 27 percent respectively. The Air Force has the longest active duty requirement, demanding 4 years active duty for nonflying officers and 6 years of service for pilots and navigators. The average career retention rate for Air Force ROTC officers is approximately 50 percent.

Army OCS is a prime source of second lieutenants during expansion periods. Candidates are chosen from warrant officer and enlisted applicants who possess at least a high school education. College graduates may enlist for the Army OCS but are required to complete basic and advanced individual training before entering OCS training. The majority of Army OCS graduates are commissioned as Reserve officers. All candidates for the Navy OCS program must have a college degree except for a limited number of meritorious enlisted men. With minor exceptions, the Navy program awards a Reserve commission. The Air Force Officer

Training School (OTS) limits its input to college graduates only, including those enlisted men who are in the Airmen Education and Commissioning Program (AECP). Distinguished graduates may qualify for Regular Air Force commissions. The Marine Corps OCS is used to fill unprogramed Marine officer requirements, and the selection criteria vary yearly. The Marine Platoon Leader Course (PLC) is a college source program conducted during the summer months. Army OCS demands a minimum active duty commitment of 2 years and currently achieves a career retention level of 75 percent. Air Force OTS requires a 4- and 6-year service obligation, the longer term being for flight trainees, and OTS achieves a career retention rate of approximately 48 percent. The Navy and Marine programs all have minimum service requirements of 3 years for Reserve and 4 years for Regular appointees. These programs are experiencing retention rates of approximately 15 percent for Navy OCS, 50 percent for Marine OCS, and 30 percent for Marine PLC.

The contribution to officer accessions by the various procurement programs during the period FY 61-65 is shown in table III.[7] It can be seen from this table that during the pre-Vietnam period the United States obtained the majority (64 percent) of its first-term officers through the OCS and ROTC programs. Further, it should be noted that, excluding the direct appointees and special category officers from the 5-year totals, the ROTC and OCS programs have provided 90 percent of the first-term officer accessions. This group is obviously vital to the maintenance of a viable and well-qualified professional officer corps.

One reason for suspecting that an adequate supply of volunteer officers could prove difficult to obtain is that the center of current dissent is the college campus. The most vocal and physical manifestations of opposition to the Vietnam war, to the draft, and to ROTC units on campus are found among college youth. As previously discussed, the primary source of officers is this same college youth, and the direct results of their protests have been significant. During the 1968-69 academic year, student pressures caused four ROTC units to be "invited" to leave campus. During the same period, student groups at 49 universities

TABLE III—PERCENTAGE OF TOTAL ANNUAL OFFICER ACCESSIONS BY SOURCE FOR FY 61-65

Service	OCS/OTS[a]	ROTC	ROC/PLC[b]	Academy	Other[c]
Army	8%	63% S	---	3%	26%
Navy	41% S	17%	2%	7%	33%
Marine Corps	31% S	12%	33%	4%	20%
Air Force	31% S	32% S	---	4%	33%

[a]Includes Navy AOC, Marine OCC, Air Force OCS, and AECP.

[b]Although a significant source of Marine Corps officers, this group assembles for training during the summer months only and was unavailable to this study group.

[c]Includes direct appointments, medical, dental, nurses, chaplains, lawyers, women officers, interservice transfers, NESEP, Navy Limited Duty Officers, and recalled retired and Reserve officers.

S—denotes program included in Naval War College Survey, March 1970.

Source: Alan E. Fechter, *The Supply of First-Term Military Officers* (Institute for Defense Analysis, Alexandria, Va.: 1967), p. 55.

convinced the administration that compulsory ROTC should be discontinued.[8] This general disaffection with the military resulted in a dramatic 35 percent decline in the Army and Air Force first-year ROTC enrollments and a 25 percent decline overall during the 1969-70 academic year.[9]

While the Vietnam war has undoubtedly accelerated and amplified youth's dissatisfaction with the military, these attitudes are not just a recent phenomenon. The change in attitudes began in the early 1960's and is manifested in the ROTC enrollment data portrayed in figure 1. Student pressure over the years has been the major factor in the sharp decline in the number of compulsory ROTC units. The related decline in MS-1 enrollment is clearly evident. The only aberrations in the enrollment curve are the 1961-62 Berlin buildup and the 1965-66 Vietnam buildup.

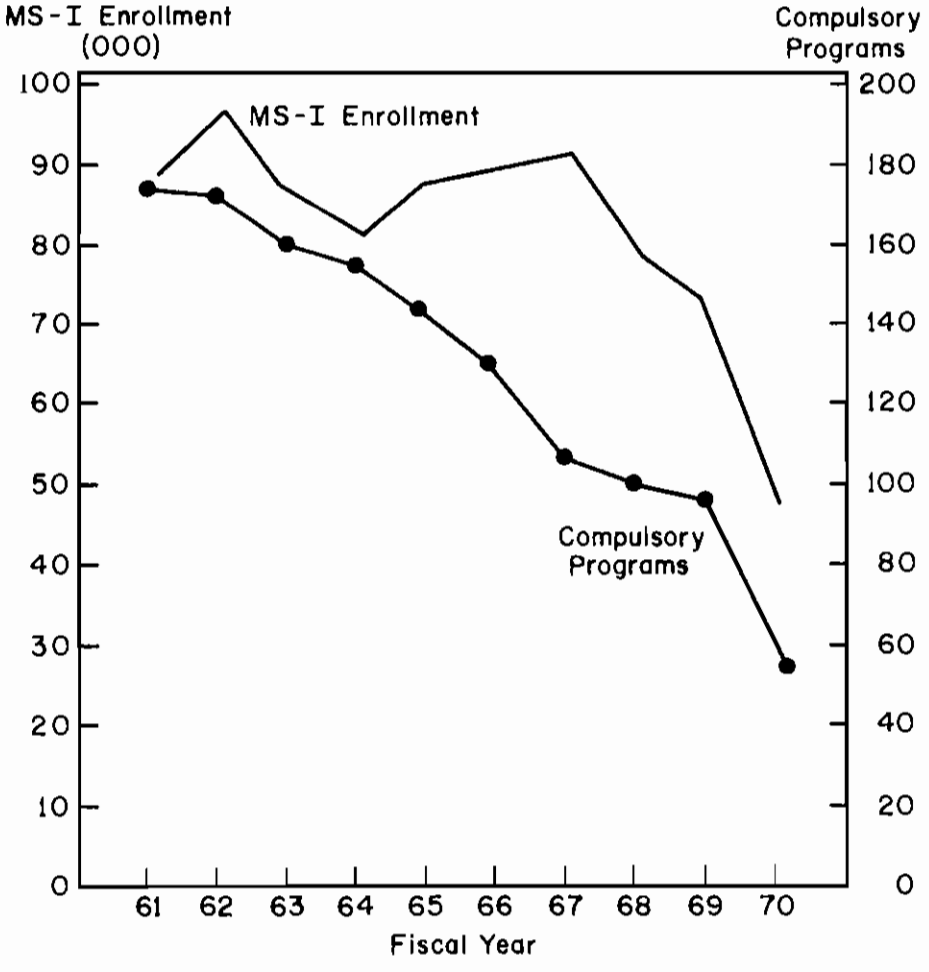

Fig. 1—Army ROTC MS-I Enrollment Compared with Compulsory Programs FY 61-70

Source: U.S. Dept. of the Army, Office of DCSPER, "College Male Enrollments, ROTC Enrollments, and Officer Production," and "Trend Required to Elective," Working Papers, 1969.

Essentially, production from this vital source of college trained youth is supported by draft pressures. Figure 2 displays the close parallel between production and draft calls when the lag time between increased draft pressure and the 2- to 4-year production lag is taken into account. A slight decline in production was experienced in the early 1960's, but this was rescued by the combined effect of the 1964 ROTC Vitalization Act and the 1966 jump in draft calls. The study group foresees that with a continued reduction in draft calls, the ROTC production curve will assume a slope similar to the MS-1 enrollment curve in figure 1. In any event, these data clearly indicate that a significant downward trend in attitudes was established before the war became a major issue.

Another supporting hypothesis is that economic incentives at or below comparability with the civilian sector

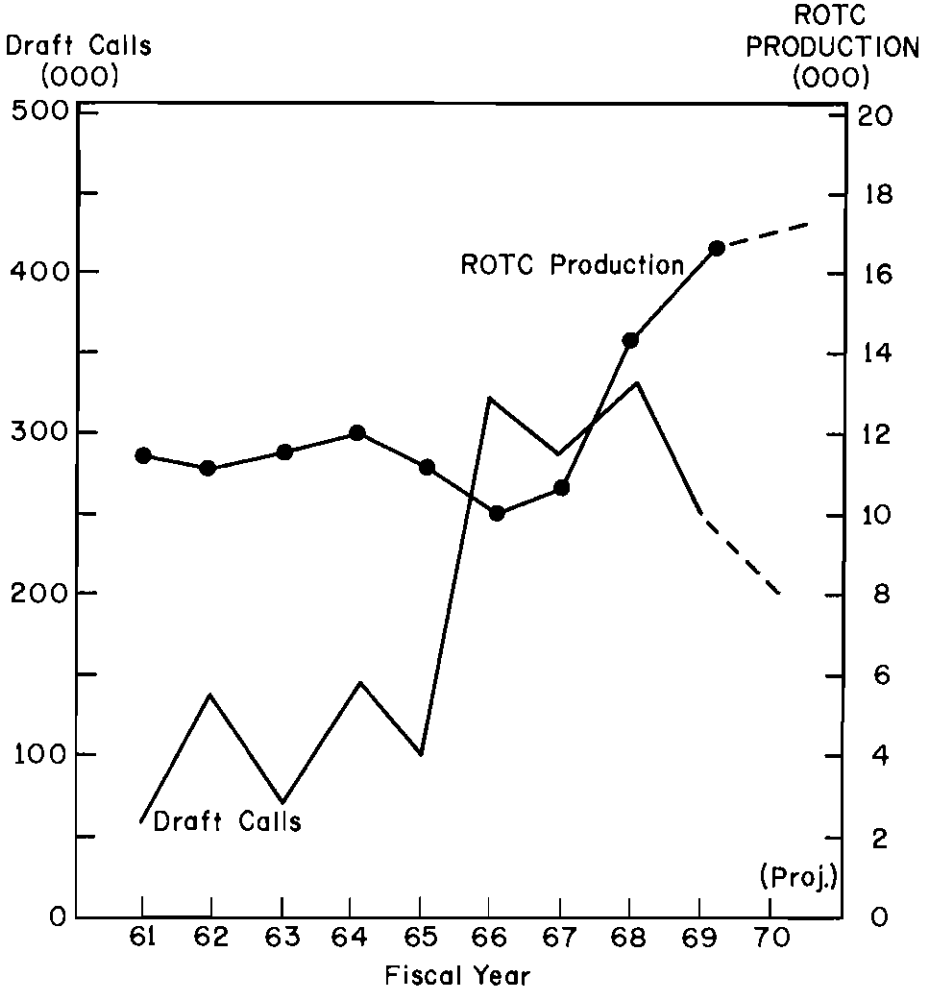

Fig. 2—Army ROTC Production Compared with Draft Calls FY 61-70

Source: U.S. Dept. of the Army, Office of DCSPER, "College Male Enrollments, ROTC Enrollments, and Officer Production," Working Paper, 1969; U.S. Dept. of Defense, "Selected Manpower Statistics," April 1969, p. 46-48.

will be inadequate to attract college graduates in sufficient numbers to satisfy requirements. There is substantial evidence that, although significant, the pay of officers is not the prime inducement for service.[10] There is also a finite limit to monetary incentives which are politically feasible. The possibility of the President and the Congress approving monetary incentives which would raise officer salaries above comparability is unlikely. Historically, officer salary increases have lagged behind civilian raises, and basic scales have remained below the level of comparability.[11] There is another important aspect to the monetary considerations of an all-volunteer concept. Assuming the legislative and executive branches did agree on salary increases adequate to initiate a volunteer system, the political feasibility of maintaining comparative rates on a continuing basis is a moot question. The costs of such a system during periods of mobilization would be astronomical and must be considered by the Congress in making their initial decision. Consequently, the feasibility of a volunteer system based primarily on monetary incentives appears questionable.

Research Design. The central problem and the subordinate notions just presented describe the basic framework and direction of the research effort. A review of prior investigations reveals that considerable research has been accomplished in the general area of attitudes toward military service. Although not current, these earlier efforts have been particularly useful in the formulation stage of the study and have been invaluable throughout the study in comparative and trend analysis.

The principal deficiencies in available data are lack of timeliness and lack of information related specifically to potential officers. The increased pitch of campus dissent and the ominous drop in ROTC enrollments this year established a clear requirement for current data directly from this primary source of officers. Other research on this subject has concentrated on active duty junior officers and enlisted inductees or enlistees. Since no current data on the attitudes of potential officers toward military service could be located, an original research effort was considered mandatory.

Before specific methods of collection were established, it was necessary to formulate the exact information that would be required to support the central problem. Answers to the following questions were deemed essential: What are the current attitudes toward military service among prospective officers (namely ROTC and OCS candidates)? What percent of these officers would have volunteered for a commissioning program if there had been no draft? What is the strength of realistic monetary incentives? Has the image of being a military officer deteriorated in the eyes of prospective officers? What has been the impact of the Vietnam war on current attitudes toward a military career? Are there quality differences between those who indicate they would volunteer and those who admit they are definitely draft motivated? Current information on these points should lead to a confirmation or denial of the downward trend in attitudes of college youth toward military service and permit a realistic appraisal of the central problem—the supply of officers under an all-volunteer force system. Critical questions concerning anticipated officer requirements under an all-volunteer force concept generated a need for a variety of quantitative data regarding force levels, annual accessions, and retention rates. These data were taken almost exclusively from Department of Defense (DOD) sources. Over 20 direct interviews and telephone conversations were conducted by members of the study group with key DOD manpower officials, high-ranking military officers,

social scientists at several universities, and with four of the key research associates who worked for the Presidential Commission on the All-Volunteer Force.

The groups of prospective officers whose attitudes were required are described in the previous section on officer resources. The large size and geographical dispersion of these groups dictated two features of the research. Since it was impossible to conduct sufficient personal interviews to approach any degree of representativeness, the questionnaire was selected as the primary data-gathering instrument.

The ROTC sample was stratified to insure representativeness by service (Army and Air Force) and by year of school (freshman through senior). The sample size was established by using the standard error of the proportion to insure an accuracy of plus or minus 6 percent at a .05 probability level on the key draft motivation question.[12] Sufficient universities were purposefully selected (from among those having voluntary ROTC programs only) to insure adequate representation along geographic, size, and school sponsorship lines. At the universities selected, approximately 20 percent of the ROTC enrollment in each school year was surveyed.[13] A total of 3,000 questionnaires were mailed to 29 universities. Of these, 2,400 were returned from 28 universities. This represents a 1.7 percent sample of the total Army and Air Force 1969-70 ROTC population of 145,000 students.

The samples of the Navy OCS, the Air Force OTS, and the Marine Corps OCS were taken from a total of 10 different classes which were in session during February 1970. A total of 1,250 questionnaires were sent to these schools, and 1,197 were returned, which yields a 12 percent sample of the programed FY-70 output of 9,800 officers from these sources.

The basic questionnaire was designed to secure essential information in three general areas: biographical data, extent of draft motivation, and attitudes toward a variety of military-related subjects. The ROTC questionnaire was pretested by administration to 117 students representing 4 class years at a nearby university. This pretest was accomplished by the study group to afford the opportunity to gain firsthand the reactions and suggestions of the students. As a result of this effort, several questions were eliminated and others were extensively revised. None of the pretest responses are included in the final data. The NOCS, AFOTS, and MCOCS questionnaires required only minor adaptations (primarily in the biographical section) to the basic ROTC questionnaire.

A special questionnaire was designed to obtain information from Professors of Military Science and Aerospace Studies, pertaining to the overall ROTC program. The insights provided by these senior officers from their vantage points proved extremely valuable in the interpretation of the basic data.

All questionnaires were mailed to the school military faculty for administration. The inherent danger of sponsorship bias was recognized; however, steps were taken to minimize these effects. First, individual envelopes were attached to each questionnaire with specific instructions for the respondent to seal his reply in the envelope provided. Second, at no point were respondents asked for their names or other identifying information. In this way the anonymity of the respondent was assured thus minimizing bias and encouraging frank answers. The frequency of voluntary write-in comments and the high percentage of responses to sensitive questions (e.g., as to father's income; over 90 percent responded) indicate the objectives of these safeguards were realized.

Analysis of the Survey Data. The officer corps of the U.S. Armed Forces is composed primarily of volunteers. That is, officers have entered military service as a voluntary action and not as a result of being conscripted. It has been argued that since the officer corps is currently composed of volunteers, there is little reason to believe that it would be difficult to recruit sufficient numbers of officers under an all-volunteer armed force concept.

Realistically, it should be recognized that a given percentage of the current officer corps was motivated to volunteer by the pressures of the existing draft laws. Many of these officers were "reluctant volunteers" at first, but after experiencing service life they decided to remain on active duty. The question that comes to mind is, What percentage of the current officer corps do they represent? There is evidence to indicate that it is substantial.[14] While the overall size of this particular group is unknown, one may conclude that many present career officers would not now be in the service had it not been for the initial exposure to service life induced by the draft.

In considering an all-volunteer armed force, two groups of more immediate concern are the college students and the recent graduates who enroll in officer procurement programs. These represent the primary source of future officers. What is their attitude toward military service? Would they volunteer in sufficient numbers to maintain required force levels in the absence of a draft?

There is ample evidence to conclude that during the last decade the attitudes of youth toward military service have indeed changed. While the United States may eventually withdraw its combat troops from Vietnam and the armed services may be reduced to pre-Vietnam levels, world conditions will never return to 1965 nor will the attitudes of college youth reflect those of 1965. Consequently, while some earlier data are available, any forecast of volunteer officer accessions in the absence of a draft would be deceiving if developed by using the attitude data generated during this earlier period. For these reasons it was considered essential that current data be obtained for a meaningful analysis.

Earlier studies, which were based on a 1964 DOD survey, implied a substantial draft effect on the procurement of first-term officers.[15] A comparison of the current attitudes of college youth toward military service with these earlier studies is appropriate. Therefore, the 1970 Naval War College survey posed the same question to current officer candidates concerning draft motivation that was asked of first-term commissioned officers in earlier DOD surveys. A comparison of the responses reveals that the negative trend toward voluntary service evident in 1968 continues in 1970. More complete appreciation of this decline is obtained by a review of the principal procurement programs.

In the 1964 survey, 46 percent of the first-term officers who entered military service from an OCS program indicated that they would have volunteered without the draft. This percentage dropped to 31 percent of the officer candidates currently enrolled in the Navy OCS and Air Force OTS programs.

The 1964 DOD survey data indicated that 52 percent of the first-term officers who entered military service through an ROTC program would have done so without the draft. The current study shows that of the college students now enrolled in Army and Air Force ROTC programs, only 46 percent would have joined these programs in the absence of a draft.

Figure 3 reflects the relative degree of volunteerism and draft motivation by program and service. It is obvious that a wide disparity exists among the various programs. Surprisingly, only 20 percent of the Navy OCS candidates indicate

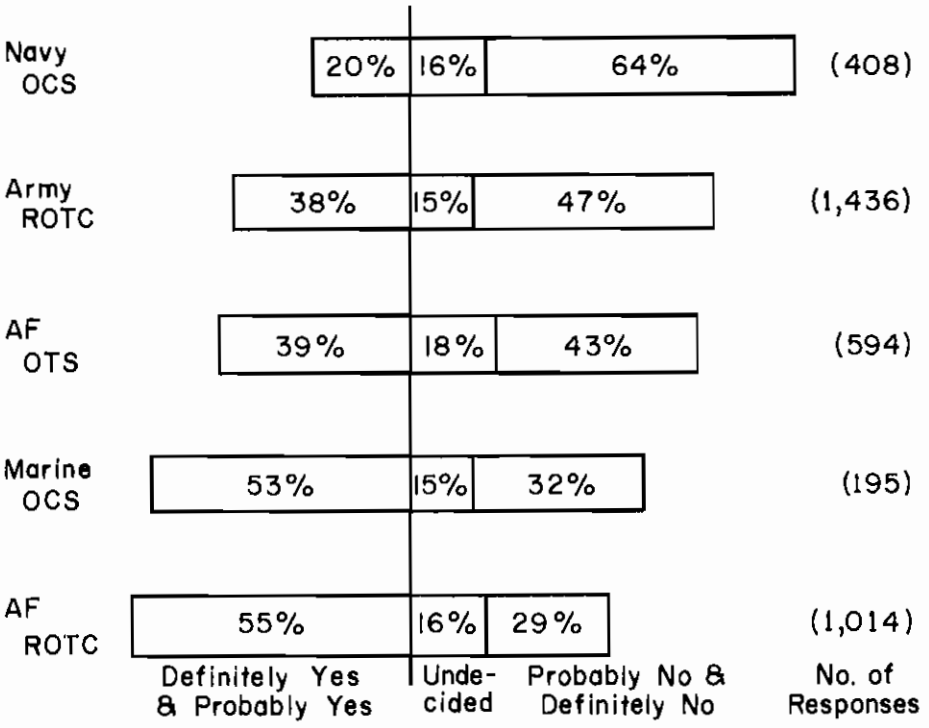

Fig. 3—Response to Draft Motivation Question by Participants in Officer Procurement Programs[a]

[a]The question asked was "If there were no draft and you had no military obligation would you have enrolled in the OCS/OTS program?"

Source: Naval War College Survey, March 1970.

they would have volunteered in the absence of the draft. The fact that the Navy currently receives far more applicants than it can accept for this program is evidence of the impetus provided to other service programs by the Army draft. Another partial explanation of the differences in volunteerism among programs is the difference in obligatory service associated with each. Those selective programs which require the longer obligatory service commitment tend to attract a higher percentage of career motivated individuals. In this example, the Navy OCS program carries a 3-year commitment, while the Air Force ROTC program requires 6 years obligatory service for rated (flying) officers and 4 years for nonrated officers. Another factor influencing the relatively high degree of volunteerism in the Air Force programs is the attraction provided by the opportunity for flight training. Additionally, Air Force ROTC candidates are at least partially screened for career motivation. By contrast, this is not a requirement for Army ROTC. The high percentage of volunteerism displayed in the Marine Corps OCS program is probably due to the large number of noncollege graduates (16 percent) and the high percentage of prior enlisted personnel (20 percent).

Figure 4 represents the relative "interest in a military career" among the candidates of the various programs. These results are consistent with and provide further evidence of the significant differences observed in figure 3.

It is important to note that the overall percentage of true volunteers (46 percent) in the Army and Air Force

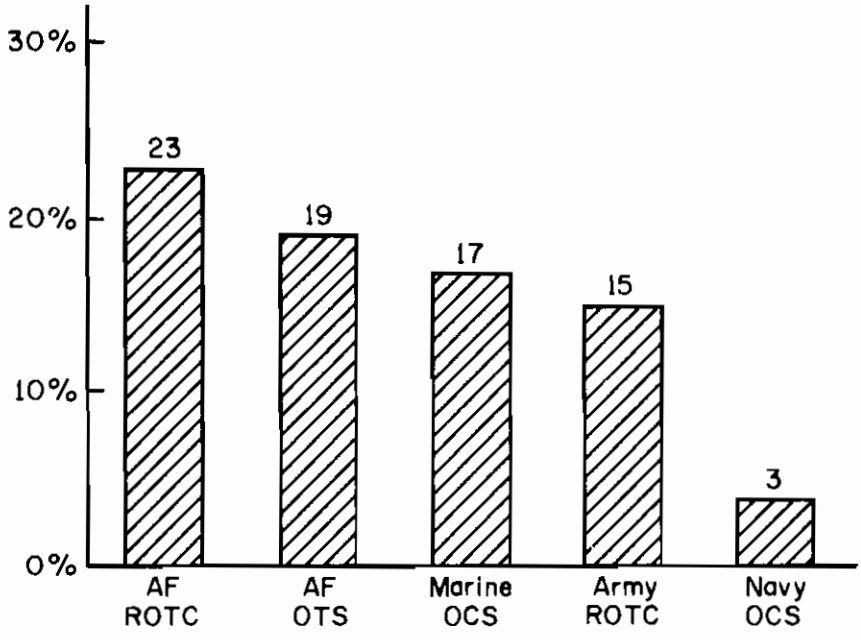

Fig. 4—Percentage of Career Motivation[a] by Program

[a]The percentage indicating as their first choice "Interest in e military career" in response to the question, "Which of the following most nearly represents your primary reason for enrolling in the ROTC/OCS/OTS program?"

Source: Naval War College Survey, March 1970.

ROTC includes all participants, freshmen through seniors. While the students enrolled in ROTC III and IV (primarily juniors and seniors) must commit themselves by contract to serve on active duty upon graduation, this is not the case for those students enrolled in ROTC I and II (primarily freshmen and sophomores). On those campuses where no compulsory ROTC program exists (over 80 percent), students may enroll in ROTC I and II as an elective for academic credit without committing themselves for any further ROTC training or subsequent military service. Upperclassmen, on the other hand, have arrived at a hard decision point. If they become eligible for the draft at the end of their senior year, they can either be conscripted in the Army enlisted ranks or enter one of the officer procurement programs. Since the underclassmen are still several years away from having to face that decision, the pressure of the draft is considerably less.

Table IV provides an indication of the degree of volunteerism associated with each college class year group. Since it is the ROTC senior and not the freshman that becomes the first-term officer, the relatively low percentage of seniors who would be in the program without benefit of the draft is significant. On this particular question there exists a high degree of consistency between responses of the ROTC seniors and those of the new college graduates in the OCS/OTS programs. This indicated reduction in productivity in the absence of the draft may, in fact, make it uneconomical to continue the ROTC program at many institutions under an all-volunteer force scheme.

Previous studies have suggested that geographic source, marital status, academic achievement, and socioeconomic

background are among the factors which may be predictors of attitudes toward military service. Examination of the Naval War College Survey data permits the following observations concerning these factors.

TABLE IV—ARMY & AIR FORCE ROTC RESPONSE TO THE DRAFT MOTIVATION QUESTION[a] BY CLASS YEAR

Class Year	Percent Responding "Yes"[b]	Number of Respondents
Freshman	54%	724
Sophomore	45%	529
Junior	40%	453
Senior/ Graduate	30%	741
All Classes	**46%**	**2,447**

[a]The question asked, "If there had been no draft and you had no military obligation, would you have enrolled in ROTC?"

[b]Those responding "Yes Definitely" or "Yes Probably." These data proportionately adjusted for relative program size and population distribution by class.

[c]A chi-square test of the class year differences in volunteerism was statistically significant at the .01 probability level.

Source: Naval War College Survey, March 1970.

The Naval War College Survey compared the percentage of total respondents by geographical region who indicated they would have volunteered for their respective officer programs in the absence of a draft. Currently, officer procurement programs oriented toward college graduates draw heavily from the South. Approximately 50 percent of the Army and Air Force ROTC members are from colleges in this area. In the absence of a draft, the existing area imbalances would be amplified somewhat by virtue of the indicated higher percentage of volunteerism in the South (45 percent) and the significantly lower percentage in the Northeast (31 percent).

The survey data also indicate an inverse relationship between academic achievement and the propensity for military service. It is observed that the volunteers in all the officer programs sampled fell below their draft motivated counterparts in academic achievement. These findings are consistent with those of previous studies which measured the relationship of career motivation to educational attainment.[16] Significantly, of the 71 advanced degree members included in the OCS/OTS sample, only nine indicate voluntary enrollment in the absence of the draft and only two indicate they are motivated toward a military career. Similarly, of the 87 candidates for advanced degrees included in the ROTC sample, only seven are true volunteers and only two of these are career motivated. This inverse relationship of academic achievement and propensity for military service may be evidence of the relatively better earning opportunities the academic achiever perceives in civilian pursuits. It may also be associated with the general aversion of persons with higher academic achievement toward the military environment.

Survey data indicate that over 40 percent of the candidates enrolled in college oriented procurement programs are confined to two academic disciplines—engineering and business administration. It appears that except for select fields, such as medicine and law, the services have not identified their needs by academic specialty. Generally, officer candidates are enrolled regardless of their academic majors and are assigned to duty in accordance with service needs. Career retention studies demonstrate that failure to recognize first-term officers' education, training, and personal interests is at the root of dissatisfaction with assignments during the first tour of active duty and is a

prime influence in their decision to reject a service career.

The expected inverse relationship between father's income and the degree of volunteerism is confirmed by the survey data. A similar comparison between father's occupation and volunteerism reveals that an inverse relationship also exists but is not statistically significant in all programs. As might be expected, of the 192 sons of military fathers in the survey, a high percentage (72 percent) indicate they would volunteer for service in the absence of a draft.

Married candidates represent a large segment in the OCS/OTS sample (41 percent), while the percentage of married students in the ROTC sample is comparatively small (10 percent). The study group anticipated that the married group would reflect a larger degree of draft motivation than the single group. In the OCS/OTS sample, single candidates were found to be somewhat more favorably disposed (36 percent) toward volunteering for a commissioning program than were married candidates (34 percent). However, this small margin is reversed in their response to an expressed interest in a military career (married—16 percent vs. single—11 percent). This indicates that an almost equal response to voluntary service may be expected from these two groups in the absence of a draft.

Based on the responses to the Naval War College questionnaire, the typical officer candidate currently enrolled in the officer programs surveyed feels rather strongly that he could obtain a good position in civilian life at a much better salary than he will be receiving as a newly commissioned officer. However, having entered the program, the officer candidate believes that military service as an officer, in the career field of his choice, will clearly enhance his potential for a rewarding position when he returns to civilian life.

Generally, the officer candidate strongly supports the concept that every able-bodied male citizen has an obligation to serve his country in some kind of *national* service. However, he does not feel that such service should necessarily be in the *military*. In fact, he is inclined to believe that during peacetime, military service should be on a voluntary basis. This negative attitude toward military service is influenced by the U.S. involvement in the Vietnam war, but this factor is only one of several that frame this general attitude. Interestingly enough, while this negative attitude toward required military service is rather strong, an equally firm conviction is expressed that a strong military force is essential to U.S. world leadership.

Becoming a commissioned officer in the Armed Forces of the United States is considered a distinct achievement. However, becoming an officer in the Armed Forces is not what the new college graduate prefers for himself upon graduation. In fact, were it not for the threat of the draft, less than half of the officer candidates would voluntarily have entered the officer programs. Despite the other attitudes expressed, it is this latter fact that must be recognized and realistically assessed before an all-volunteer armed force can be considered feasible.

Clearly, the threat of the draft is the strongest motivating factor currently influencing college youth to volunteer for officer training programs. In recent years the increased draft calls resulting from requirements for Vietnam have prompted greater numbers of college trained youth to volunteer for military service. Consequently, certain officer procurement programs (most notably the Navy OCS and Air Force OTS) received an abundant supply of applicants and became more selective. This selectivity is typical of the behavior of employers in a loose labor market. With the draft stimulating more potential officers to seek commissions than otherwise, the labor market for newly

commissioned officers has been predominately a buyers' market. In some programs available positions are, in effect, rationed by establishing high educational and other standards. This procedure is apparent in the Navy OCS program (which displayed the highest percentage of draft motivation) where the grade point average is 3.1 on an adjusted 4.0 scale and where 13 percent of the candidates possess advanced degrees. The Air Force OTS program has also enjoyed sufficient applicants to afford considerable selectivity.

It has been argued that with decreasing military manpower requirements and the increasing population, there will be sufficient numbers of college graduates to satisfy officer requirements. However, the data indicate that the magnitude of the officer procurement problem in the absence of the draft will pose serious difficulties for those programs surveyed.

One surprising fact revealed during the couse of this study was the large percentage of the sample population that did not answer positively for or against many of the questions. There was some concern during the pilot testing of the questionnaire that the undecided group was larger than should be expected. However, discussions with students in the pilot sample revealed that while the questions were clear, they simply had not formed an opinion on some of the topics addressed.

Economic Incentives. The analysis thus far has examined the capability to man the officer corps of the Armed Forces in the absence of a draft and without the application of other inducements. Earlier studies implied that an all-volunteer officer corps was feasible, providing the basic pay of first-term officers was increased substantially (28 percent). In an effort to determine the effect monetary incentives might have for enticing the currently "reluctant volunteer" to become a "true volunteer" in the absence of a draft, the following question was asked: "If you did *not* indicate that you would have enrolled in the ROTC/OCS/OTS program in the absence of a draft, would you have enrolled in the program under any of the following conditions?"

> If the service agreed to pay my college expenses at the school of my choice in return for an equivalent number of years of active duty (e.g., 3 years college for 3 years active duty).
>
> If the service provided a $100 monthly allowance during each of 4 college years in exchange for a 2-year military obligation.
>
> If the initial pay and allowances offered by the service were comparable to or greater than the initial salary of the civilian occupation I intend to pursue upon graduation.
>
> In a "no draft" situation I would not have considered volunteering for ROTC/OCS/OTS under any of the above conditions.

Recognizing that these data apply only to the nonvolunteer group, a comparison of the responses received showed that 34 percent of the total would favorably respond to financial assistance while in college in exchange for military service. Another 32 percent would favorably respond if the pay of first-term officers was comparable to the initial salary of the civilian occupation they intended to pursue. A disturbing fact is that in the absence of the draft, 34 percent of the nonvolunteer group would not volunteer under any of the incentive conditions posed in the questionnaire. Most notable, in the Army ROTC program 47 percent of the nonvolunteers did not respond favorably to the range of incentives offered.

An integral part of this study is a survey of Army Professors of Military Science (PMS) and Air Force Professors of Aerospace Studies (PAS). A questionnaire was designed to obtain a personal appraisal of student attitudes toward the ROTC program and military service from responsible individuals living in the campus environment and associated with college students on a daily basis. Of the 28 colleges and universities surveyed, 21 ROTC unit commanders responded.

A review of these responses reveals the following assessment. All but two respondents report a generally negative attitude of college youth toward the ROTC program and toward military service in general. Influence of the Vietnam war on the attitudes of campus youth toward the ROTC program is described by the respondents as being substantial. Significantly, the comments of the military professors ascribe a greater impact of the Vietnam war on campus attitudes than do the student questionnaire responses.

Most respondents indicated that the ROTC program had incurred losses following the draft lottery; however, few were able to relate the losses directly to the lottery itself. Two respondents indicated that an approximately equal number of withdrawals by low lottery risk members had been replaced by applications from high lottery risk students. The nature of the responses does not permit a definitive conclusion as to the effect of this first draft lottery on the ROTC program. However, it does demonstrate the importance of the selection of a meaningful date to conduct the draft lottery so as to minimize the disruptive effect it may have during the class year. Otherwise, a degree of turbulence in ROTC membership can be expected following the draft lottery each year.

Judgment of the respondents reflects a unanimous opinion that the ROTC program would suffer a severe reduction in membership in the event of an all-volunteer force. Many expressed the view that continuation of an ROTC program on their particular campus would be of questionable value given the small number of volunteers who would be attracted to the program. The majority indicated that currently less than 12 percent of the ROTC membership is career motivated, although a few claimed a career group as large as 30 percent. A few, however, reasoned that the quality of membership would improve by virtue of the anticipated high level of career motivation which would characterize an all-volunteer program.

It is the judgment of a majority of military professors that monetary incentives, such as increased monthly allowances and scholarships, would be unable to offset the expected drop in ROTC enrollment resulting from an all-volunteer armed force. Similarly, a great majority of the professors do not consider first-term officer pay to be an influencing factor in attracting students to the ROTC program. In fact, some identified a general unfamiliarity with officer pay and allowances on the part of ROTC students, particularly those at the freshman and sophomore level.

The study group experience supports this observation on the basis of its contact with college students during the pilot testing of the survey questionnaire. Students requested elementary information about first-term officer pay in order to answer questions posed in the questionnaire. There is some evidence that interest in the pay of junior officers is not manifested by ROTC members until they reach their senior year, at which time the immediacy of military service becomes a reality.

This generally pessimistic appraisal of campus attitudes is cause for concern. The fact that this appraisal was made by a uniquely qualified group of observers, representing both public and private institutions in all regions of the country, including both Army and Air Force

programs, is particularly significant. Despite the subjective nature of the responses, an unmistakable conclusion is reached that Professors of Military Science and Aerospace Studies consider that ROTC is regarded with apathy and general dislike by the large majority of campus youth. They indicate that the draft provides the principal stimulus for the program, and in the absence of a draft the ROTC program could not be sustained on many campuses.

The feasibility of obtaining sufficient military officers under voluntary conditions will, in large measure, be determined by the attitudes of eligible youth toward military service. Toward this end, the principal officer procurement sources were surveyed, using attitudinal survey techniques. While recognizing that attitudes may change with changing circumstances, analysis of the survey results does permit certain conclusions and recommendations.

Conclusions.

1. The security of the United States demands a guaranteed system of providing qualified young men to serve as officers in the Armed Forces. The needs of the Armed Forces for a steady flow of qualified college graduates into the officer corps cannot be left to the free choice of the market place. During the pre-Vietnam period of 1961-65, conscription was required to maintain the officer corps in a 2.6 million man force. Given the current attitudes of college youth, return to this approximate force level on an all-volunteer basis is not considered feasible. Consequently, it is concluded that in the current environment, minimum officer needs for the Air Force may be marginally obtainable, but Army, Marine Corps, and Navy officer requirements will be unattainable except at the expense of quality.

2. The possibility of military service as a conscripted enlisted man in the U.S. Army provides the major incentive for first-term officer volunteers in all the services. However, without this pressure, monetary incentives would entice some college youth to enroll in one of the officer procurement programs. College-related financial assistance, such as a combination of scholarships and increased monthly allowances for officer candidates, will be just as effective as a substantial increase in first-term officer pay. Nevertheless, in the absence of a draft, both types of incentives will be required if the college oriented officer procurement programs are to remain productive.

3. A significant downward trend in ROTC enrollment was established before the Vietnam war became a major issue. This trend was obscured by the dramatic increase in draft calls during the 1966-69 time period. Under the pressure of high draft calls, the current group of advanced ROTC students committed themselves in 1968 for military service upon graduation. Consequently, it is expected that the impact of reduced draft calls and negative campus attitudes will result in sharply curtailed ROTC enrollment and production beyond the 1970 time period.

4. The high degree of selectivity now being enjoyed by the Navy OCS and the Air Force OTS programs will diminish substantially in the absence of a draft. While deterioration in quality can be expected without the draft, overall motivation and retention should improve as these programs shift to attracting candidates on career merits rather than draft pressure.

5. The prolonged involvement in Vietnam has exerted a negative influence on the college oriented officer procurement programs. It has, in fact, contributed to the decision by several prestigious universities to abandon their ROTC programs. In addition to the immediate impact on enrollment, withdrawal actions by these schools may permanently change the character of the ROTC program. If generally higher quality universities drop the ROTC

program and are not replaced in kind, the overall quality of the ROTC product will be adversely affected.

6. The ROTC scholarship program is accomplishing its objective of attracting quality students. Unlike the Navy Regular program, however, there is no evidence that the Army and Air Force employ career motivation criteria in the selection of scholarship students. Consequently, in the absence of a draft, approximately half of the ROTC scholarship holders questioned would drop out of the program.

7. In the absence of a draft, the officer corps would attract college youth of lower socioeconomic background and reduced level of academic achievement. Furthermore, existing geographic imbalances in the officer corps would be amplified somewhat by virtue of the higher percentage of volunteerism in the South and the significantly lower percentage in the Northeast.

8. Candidates are generally enrolled in the college oriented officer procurement programs regardless of their academic field of study. Almost half the candidates surveyed were limited to two academic disciplines—engineering and business administration. This approach to officer procurement may, in fact, contribute to eventual dissatisfaction with military service. Failure to recognize education, training, and personal interests in the utilization of college graduates is a primary influence in first-term officer decisions to reject a service career.

Recommendations.

1. That a system of conscription be retained and incentive programs progressively implemented to reduce or eliminate reliance on the draft. Should experience demonstrate attainability of an all-volunteer force under these conditions, maintain a standby draft system for use during general mobilization.

2. That existing ROTC monetary inducements be revised to include an increase in the monthly allowance and that a substantial increase be made in the number of ROTC scholarships awarded.

3. That the military departments establish criteria for identification of officer requirements by field of academic study.

4. That scholarship inducements be employed to support procurement of officers with selected degree specialties and that the criteria for award of ROTC scholarships be revised to include consideration of the career motivation of recipients.

5. That consideration be given to the utilization of monetary incentives in non-ROTC institutions as a means of inducing contract commitment to one of the college graduate officer programs such as OCS/OTS.

6. That first-term officer pay be raised to a level of comparability with civilian salaries for new college graduates.

7. That maximum publicity be given to existing and proposed monetary incentive programs. The full potential of incentive programs cannot be realized unless the desired population is aware they exist.

FOOTNOTES

1. National Advisory Commission on Selective Service, "In Pursuit of Equity: Who Serves When Not All Serve?" Report (Washington: U.S. Govt. Print. Off., February 1967).

2. *Report of the President's Commission on an All-Volunteer Armed Force* (Washington: U.S. Govt. Print. Off., February 1970), p. 9.

3. "The Real Revolution on Campus," *U.S. News & World Report*, 12 January 1970, p. 29.

4. "Laird Says Volunteer Plan Would Cut Forces a Third," *The New York Times*, 30 January 1970, p. 16; 1. 2.

5. Gene M. Lyons and John W. Masland, *Education and Military Leadership* (Princeton: Princeton University Press, 1959), p. 11.

6. Encyclopedic Almanac, *The New York Times* (New York: 1969), p. 205.

7. It should be noted that force levels during this period averaged 2.6 million officers and men.

8. U.S. Dept. of Defense, *Annual Report of the Secretary of Defense on Reserve Forces* (Washington: 9 February 1970), p. X.

9. U.S. Dept. of the Army, Office of the Adjutant General, *Enrollment Report Army Reserve Officers Training Corps Opening of School Year 1968-69* dated December 1968 and 1969-70 dated December 1969; U.S. Dept. of the Air Force, *Enrollment and Production of Graduates of AFROTC Units*, 31 October 1968 and 31 October 1969.

10. Franklin Institute Research Laboratories, *Career Motivation of Army Personnel—Junior Officer Duties*, Technical Report 1-212, v. I: Summary Report (Washington, 1968), p. 24. On file, DCSPER, U.S. Dept. of the Army. See also Harold Wool, *The Military Specialist* (Baltimore: Johns Hopkins, 1968), p. 116.

11. Bette Mahoney and Joan McRae, *The Opportunity Costs of Military Careers*, Study S-291 (Arlington, Va.: Institute for Defense Analysis, March 1967).

12. A ratio of 60 percent to 40 percent draft motivated vs. volunteer was used based on the pretest survey data. For a discussion of this method of determining sample size, see John R. Stockton, *Business Statistics*, 2d. ed. (Cincinnati: South-Western, 1962), p. 245.

13. It is recognized that control of randomness in the selection of individuals was relinquished to the ROTC faculty.

14. A 1961 DOD study indicates that 33 percent of Army officers surveyed (lieutenant through colonel) indicated that their initial motivation for entering the service was "drafted or ordered to duty." (As reported in Morris Janowitz, ed., *The New Military Changing Patterns of Organization* (New York: Russell Sage Foundation, 1964), p. 274.

15. Alan E. Fechter, *The Supply of First-Term Military Officers*, Study S-290 (Arlington: Institute for Defense Analysis, March 1967), p. 23.

16. Bette Mahoney and Alan Fechter, *Military Compensation and the Supply of Career Officers*, Study S-290 (Arlington: Institute for Defense Analysis, May 1967), p. 10; *Career Motivation of Army Personnel, Junior Officers' Duties*, p. 36.

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We must train and classify the whole of our male citizens, and make military instruction a regular part of collegiate education. We can never be safe till this is done.

Thomas Jefferson. To James Monroe, June 18, 1813, Works, VI, 131

On 6 October 1884, the Naval War College was established by General Order 325 of the Secretary of the Navy. The driving force behind the establishment of the new institution was Stephen B. Luce and his concept of professional education. Although congressional opposition and a change of administrations threatened the existence of the War College for several years, it soon justified itself and became an important part of the professional education of a naval officer.

STEPHEN B. LUCE AND THE BEGINNINGS OF THE U.S. NAVAL WAR COLLEGE

An article prepared

by

Rear Admiral John D. Hayes, U.S. Navy (Ret.)

The beginnings of the Naval War College are clouded in mystery and some myth. Stephen B. Luce, its founder, refused to write an autobiography, and the secondary sources relating to the establishment of the War College are, for various reasons, of little help.

Luce's papers are sketchy for this period, but good sources exist in his letters to other individuals, notably Senator Nelson W. Aldrich of Rhode Island and William C. Church, longtime editor of the *Army and Navy Journal.* Luce's own version of the creation of the college, given in *Proceedings* articles between 1902 and 1910, especially his attributing the original idea to his meeting with Gen. William T. Sherman in 1865, was prepared from memory long after events. Certain of his letters of this later period indicate that he was not clear in his own mind about what had happened back in 1884.

From October 1882 to January 1884, Luce, while still in command of the Training Squadron, was the senior member of what was then known as the Navy Yard Commission, which conducted the first comprehensive examination of the Shore Establishment of the U.S. Navy. The report of this commission is illuminating, especially with regard to Luce's advanced concept of a naval base. The real product of the commission was indirect, for it gave Luce the opportunity to personally impress Secretary of the Navy William E. Chandler and present his views. It is something of a paradox that Chandler, whose ideas on the purpose of a navy left much to be desired and who had no

interest in foreign affairs, should have initiated the pioneer endeavor in higher military education.

Several Luce letters written during his service on the Navy Yard Commission indicate the effort he was exerting to get a war college started. While in Boston, conducting the examination of that yard, he wrote his 2 November 1882 letter to Church asking his help and stating that he had mentioned the matter in a cursory way to the Secretary of the Navy, who had seemed to like it. So, he said, did Admiral Porter and two or three other officers.

A few days later he submitted his proposal in the form of an official letter. He recommended a comprehensive course of professional study in the higher branches of the naval profession, but the letter indicates that he was not yet clear in his own mind of the distinction between a war college and a line graduate school. His list of subjects included not only the science of war, naval tactics, military and naval history, international and military law, and modern languages, but also astronomy, hydrography, naval architecture, and marine engineering.

This was Luce's second letter to a Secretary of the Navy on the subject of a war college. Five years earlier, on 8 August 1877, while attached to U.S.S. *Hartford*, he had proposed a postgraduate school similar to the Army's Artillery School at Fort Monroe, which he had been observing closely. The Secretary to whom he wrote, however, was the slow-moving Richard W. Thompson of the Hayes administration. Not even an official acknowledgment of the letter is in the Luce papers. But two letters from Emory Upton, then the leading member of the faculty of the Artillery School, show how ardent Luce was for the project.

In April 1883 Luce had the opportunity to express himself publicly on the subject when a branch of the Naval Institute was established at Newport. At its first meeting he delivered a paper entitled "War Schools," which was a description of the U.S. Artillery School, the Infantry and Cavalry Schools at Fort Leavenworth, Kans., and the Engineers School at Willets Point on Little Neck Bay, Long Island. He indicated what was being done in the Army for the professional improvement of officers and what likewise could be done for the officers of the Navy. This paper was published in the Naval Institute's *Proceedings*, no. 5, 1883.

On the 19th of July of that year, he wrote enthusiastically to his son-in-law, Lt. Boutelle Noyes:

> My great hobby, now that the Training system is fairly established, is to erect a "War School" for officers. . . . I have the plan roughly mapped out, and the Alms House on the Island is to be the College. I have presented my plan to the Secretary, but he has not had time to give the matter his attention. . . . Whether it will end up in smoke or not I cannot say.

The younger man may never have received this letter, as he was killed on the following 29 August on board U.S.S. *Richmond* in Yokohama Harbor, Japan, when a falling spar struck him.

The revealing documentary of the origin of the War College and its early trials is to be found in the letters of Luce from 1883 to 1886 to Senator Nelson W. Aldrich, the fast-rising politician of Providence, R.I. These letters show the large part that Aldrich had in bringing the War College to Newport and in the development of the Naval Base there. There is a serious lacuna of important correspondence in the Luce papers for the critical year 1885, and the letters to Aldrich fill this gap.

In January of 1884 Luce suggested his plan in a letter to Capt. Francis M. Ramsay, the Superintendent of the

Naval Academy, who disapproved of it. "My views in regard to this matter," Ramsay replied, "differ materially from those expressed by you in your article published in the *Proceedings* of the Naval Institute." Ramsay could see no reason for establishing another naval academy. However, William T. Sampson, a far abler educator than Ramsay, who was to succeed him as Superintendent, shared Luce's views with regard to the need for postgraduate education for naval officers. Also, like Luce, Sampson preferred Newport and believed that it had been a mistake to transfer the Naval Academy back to Annapolis after the Civil War.

With the Navy Yard Commission finished, Luce was able to give more attention to his war college project, and by 10 March 1884 he was ready to furnish the Secretary with a draft of a general order which would set up the school. The Secretary did not act immediately on Luce's suggestion. Instead, Chandler appointed a board under date of 3 May 1884,

> . . . to report upon the whole subject of a post-graduate course, or school of application, to be established by the Department for officers of the Navy, giving in full detail the reasons for establishing such a school, the scope and intent of the proposed course of instruction, and an opinion as to the best location therefor.

The board was to consist of Luce himself, his sympathetically and scholarly minded friend, Sampson, and Lt. Comdr. Casper F. Goodrich, a friend and admirer of Sampson who had lately returned from a European cruise and was awaiting orders. Luce asked Goodrich to read his article on "War Schools" and the account of the Royal Naval College at Greenwich, England, in James R. Soley's *Report on Foreign Systems of Naval Education* (1880). Luce had been corresponding for several years with a distinguished professor at Greenwich, the naval historian John Knox Laughton.

The report of this board, which was submitted on 13 June 1884, included both a plea and a charter for a postgraduate course. The report contained all the persuasive pleading to which Luce had been subjecting the Secretary for more than a year. The school, it was claimed, would be extending to other branches of the naval profession the work that the Bureau of Ordnance was already doing in the case of the Torpedo Station. It would be primarily a place where officers would be required to study the raison d'etre of their profession—war.

Luce's concepts of maritime warfare were already well defined for in the report he called for study of:

> Campaigns that have depended for success upon the cooperation of a fleet; campaigns that have been frustrated through the imposition of a fleet; the transfer by water of a numerous army to distant points and their landing on an enemy's coast under the guns of a fleet; the various results of engagement between ships and shore batteries; naval expeditions which have ended in disaster that could have been foretold through an intelligent study of the problem beforehand; and the great naval battles of history, even from the earliest times, which illustrate and enforce many of the most important and immutable principles of war.

The report, however, disclosed that the distinction between a war college and a postgraduate school was not yet clear in the minds of the board members. The course would supplement the instruction in torpedoes. The theoretical subjects would be presented under two

heads: (1) the science and art of war; and (2) law and history. To these would be added practical exercises on the subjects of ordnance, torpedoes, and hydrography. The laboratory for these exercises would be the North Atlantic Squadron.

The last part of the report discussed a location for the school. Of the places which suggested themselves—Washington, Annapolis, New York, Newport, and Boston—only the last two were seriously considered. Boston possessed a great university and a technical school with eminent professors and excellent libraries, but the only suitable site there would be the navy yard, which was not considered a desirable location. At Newport the college would have its own site and yet would be close enough to permit either lecturers or students to travel to and from Boston for academic purposes.

The institution was established by General Order 325 of the Secretary of the Navy on 6 October 1884. It was to be known as the Naval War College and was to be under the supervision of the Bureau of Navigation. Luce was assigned to be its president. Like several important activities created in the Navy Department before and since, the Naval War College began without specific congressional approval or appropriation.

In an attempt to gain congressional recognition, Aldrich, on 4 February 1885, introduced a resolution in the Senate requiring the Secretary of the Navy to report the steps that had been taken to establish an advanced course of instruction for naval officers and the reasons which suggested such an action. In his answer Chandler repeated the arguments that Luce had originally presented to him. Officers had to be prepared for the changes in naval warfare resulting from the development of armored ships, rams, seagoing torpedo boats, and high-power guns. The surplus of officers in the Navy and the availability of public grounds and buildings made possible the establishment of such a college at little additional expense. Moreover, the Army had three similar schools, the Navy but one.

Luce was finally detached from command of the Training Squadron on 30 June 1884. Before assuming his War College duties, the Secretary assigned him duty as interim Commander of the North Atlantic Squadron, and he assumed this duty on 25 July 1884. In addition, the Secretary promoted him to acting rear admiral, a temporary rank authorized during the Civil War to enable juniors to be placed in commands over their less efficient seniors. Chandler resurrected this authority and used it as a form of flag selection which Luce attempted to defend with an editorial in the *Army and Navy Journal*. He thus became a target for resentment which was later directed at the War College. Luce reverted to his permanent rank of commodore when he went ashore on 25 September 1884 to become president of the War College. He was promoted to the permanent grade of rear admiral the following year when a vacancy occurred on the retirement of Francis A. Roe on 5 October 1885. A recent historian of the Naval War College made this comment on Luce's assumption of the duty that was to be his monument:

> To the officers serving with Luce in the North Atlantic Squadron the infant Naval War College seemed a poor substitute for the headship of a line Bureau, which an officer of Luce's achievements could normally expect at the end of his career. Though they did not say so aloud, many of his friends thought that the old sea dog might be getting a bit soft-headed to throw away his chance of eminence and power for a new-

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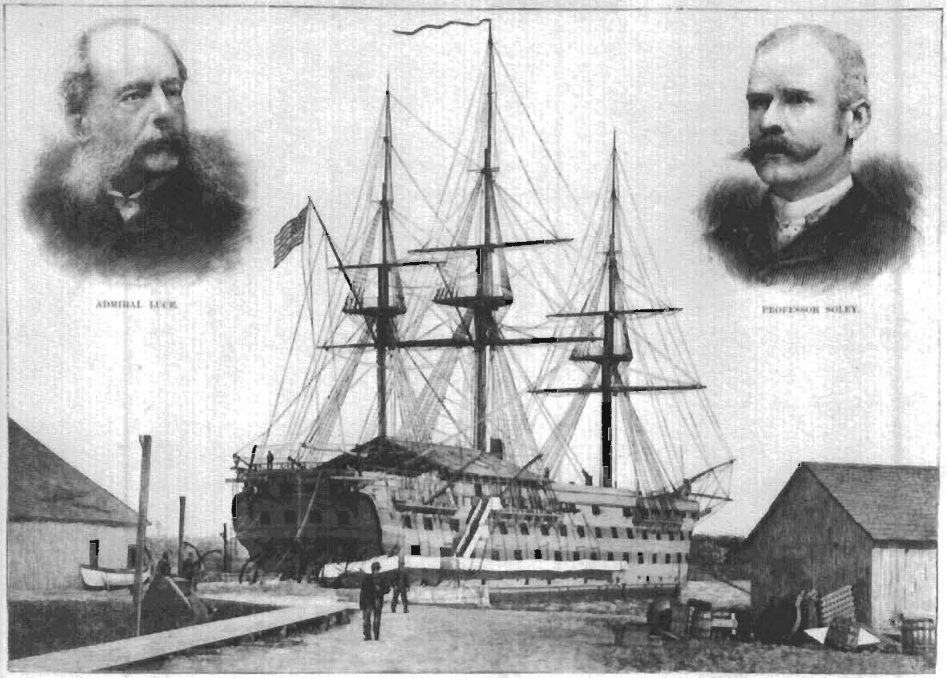
ADMIRAL LUCE.

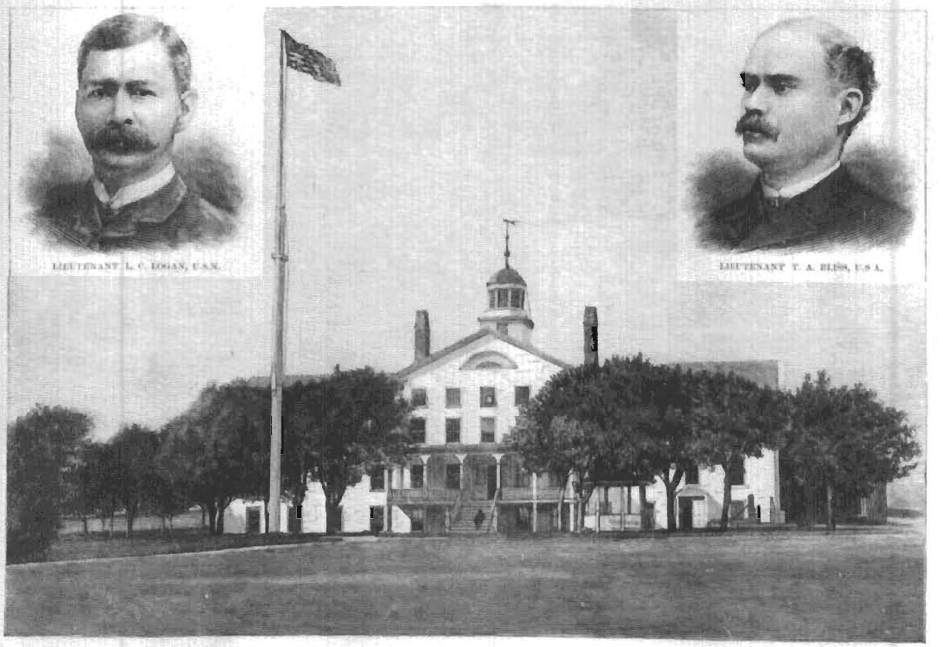
PROFESSOR SOLEY.



THE "NEW HAMPSHIRE," TRAINING SHIP.

LIEUTENANT L. C. LOGAN, U.S.N.

LIEUTENANT T. A. BLISS, U.S.A.



THE UNITED STATES WAR COLLEGE, COASTER'S HARBOR ISLAND, NEWPORT, RHODE ISLAND.—PHOTO. BY LUDOVICI, NEW YORK AND NEWPORT.—[SEE PAGE 414.]

fangled scheme with little chance of success.[1]

The actual opening of the college has become somewhat apocryphal. According to at least two accounts he christened the almshouse in the name of the Father, Son, and Holy Ghost and made the sign of the cross while doing so. This action caused some naval wits in Washington to dub the new institution "Trinity College."

His first efforts were directed toward organizing a faculty for the first course, which began in the summer of 1885. He began this task several months before the school was actually authorized.

His papers indicate that on 22 July 1884 Luce wrote to Comdr. Alfred T. Mahan, proposing that he accept the naval position in the Department of Science and War, undertaking primarily the subjects of naval history and naval tactics. Unfortunately, no copy of the Luce letter to Mahan has so far been located. Luce had also considered Goodrich for this position, but the latter demurred, as he was already settled in Washington. Another individual considered was Lt. Morris R.S. Mackenzie, youngest of the three able sons of the unfortunate Comdr. Alexander Slidell Mackenzie. However, the scholarly Mahan was Luce's choice. The two men had been together both at the Naval Academy and at sea. Mahan had an essay on naval education published in the *Record* (now *Proceedings*) of the Naval Institute in 1879, and in 1883 he had produced an excellent volume on the naval history of the Civil War, *The Gulf and Inland Waters.*

Mahan replied favorably to Luce's suggestion, and on 28 October 1884 Luce nominated him to the Secretary. Mahan at that time was in Callao in command of *Wachusetts*, but Luce was willing to wait his return. Mahan was not detached and ordered to the Naval War College until the following September. Luce then permitted him to remain in New York to do the necessary research for his work, and he actually did not arrive in Newport until August of 1886. But on 22 January of that year he wrote to Luce on his progress. This letter outlines his concept and structure of *The Influence of Seapower upon History: 1660-1783*, although the book itself was not to appear until 4 years later.

Although he nominated several other officers for duty on the faculty, Luce was to succeed in getting only one Army officer permanently assigned. The nominations for a faculty which he submitted on 28 October 1884 included "an officer learned in military science who can be best supplied by the Army." After some correspondence with the Adjutant General of the Army, Richard C. Drum, Lt. Tasker A. Bliss was assigned and reported in time to deliver his lectures at the first session. Bliss, whom Drum described as the most accomplished officer in the profession, was an 1875 graduate of West Point and Adjutant of the Artillery School. He continued his assignment at the Naval War College until 1888 but was sent by the Army to Europe after the 1885 session to inspect the military schools and establishments there. He later founded the Army War College in 1904 and served as the Chief of Staff of the U.S. Army in World War I and as a military adviser at Versailles in 1919.

As instructor in international law, Luce nominated James Russell Soley, who was then on duty at the Navy Department as Superintendent of Naval War Records. Soley had been head of the Department of English Studies, History, and Law at the Naval Academy and was a prolific writer on naval subjects and a lecturer at the Lowell Institute. Luce could not succeed in getting him ordered to permanent duty

[1] Ronald H. Spector, "Professors of War." Unpublished doctoral dissertation, Yale University, 1967.

on the Naval War College faculty, since he was then engaged in collecting and editing material for what was to become the 30-volume *Official Records of the Union and Confederate Navies.* Nevertheless, Soley prepared an extensive series of lectures on international law, which he delivered without remuneration at each of the Naval War College sessions from 1885 to 1889. Soley ranks only after Luce and Mahan in the contribution he made to the founding of the college and to the worldwide reputation it was to gain in international law.

Other preparations included readying the physical plant for the first session. Senator Aldrich, at Luce's request, succeeded in getting an appropriation of $8,000 to be used for converting the almshouse and purchasing books and stationery. Luce had wanted $13,000 for the purpose and an additional $2,500 for the salary of a professor of international law, but Congress approved only the lower figure. Soley had to prepare his lectures on his own time and make the visit to Newport at his own expense, which he defrayed from fees for other lectures.

The first session of the Naval War College was anything but promising. Until late August of 1885, no officers had applied for instruction, due partially to the expense of living in Newport in the summertime. The class was finally composed of eight lieutenants who had attended the course that year at the Torpedo School. The first session lasted from 4 to 30 September 1885. The opening address was given by Rear Adm. Daniel Ammen. Bliss lectured on military science, based on his intimate knowledge of history and his familiarity with the standard works by military writers. Luce himself read four papers. Two were later revised and published in the *Proceedings* of the U.S. Naval Institute, "On Naval Warfare as a Science" in volume 12, 1886 and "On the Study of Naval History (Grand Tactics)" in volume 13, 1887. Comdr. Henry C. Taylor, who was to be the college's third president and its savior, lectured on naval tactics. Union Generals John C. Palfrey and George H. Gordon, and historian John C. Ropes lectured on military operations of the Civil War. Paymaster Robert W. Allen was on duty at the Naval Academy and was unable to attend. His paper on naval and military law was read. None of the visiting lecturers received honorariums.

The highlight of the first session was the series of 14 lectures by Soley. These lectures were the foundation for the program and publications on international law that were to give the Naval War College worldwide repute in this field of study. Copies of them have not been located, but the topics have been preserved in Soley's outline to Luce. They include rights and duties of states, nationality of persons and vessels, duties of the agents of a state, ships of war, piracy, conduct of belligerent operations, treatment of enemy property, and blockade.

It is difficult to determine the basic cause of the early unpopularity of the War College. It did not stem from a general anti-intellectualism within the profession, as is so often charged. Many younger officers at this time were seeking postgraduate education, and even some older officers during enforced leisure ashore and afloat broadened the educational foundation they had received at the Naval Academy. Many officers and some Members of Congress favored a war college but wanted it at the Naval Academy. The naval hospital building there, then in a caretaker status, was available. Other opposition was more pragmatic in character. Officers assigned to the Training Squadron who did not then receive sea pay desired the buildings on Coasters Harbor Island for quarters. There was the antipathy of the older men to "going back to school." Line officers were not happy about being instructed

in their profession by their juniors or by officers of the Staff Corps or of the Army.

Some of the college's unpopularity also stemmed from its Chandler sponsorship. No Secretary of the Navy up to that time had left office so generally disliked, mainly because of his methods of reforming the officer personnel situation. Many of his actions had been arbitrary, punitive, and directed against individuals such as Rear Adm. Earl English and the popular Robley D. Evans. Luce, on the other hand, was considered throughout the service to be a Chandler favorite and to have strong influence with him. Secretary William C. Whitney, who succeeded Chandler, had a neutral attitude toward the college at the beginning of his administration, but he noted its unimpressive start and unpopularity. His later misunderstandings with Luce caused his indifference to change to antagonism.

An early opponent of the college was Representative Hilary A. Herbert of Alabama, Chairman of the House Naval Committee. Luce appeared before his committee, testifying for his new college, but when the naval appropriations bill came before the House late in June 1886, Herbert stated:

> It has never been established by law, though it has been recognized in the appropriation bills, and perhaps by reference to it in other acts of Congress. Now is the proper time to consider carefully whether or not that college is to become a permanent institution. In the opinion of a large majority of your committee, it ought not.

About the time that Herbert was making these remarks, Luce was detached from the War College to assume command of the North Atlantic Squadron. The institution was therefore without an official head for over 2 months, as Mahan did not appear in Newport until late August, a few days before the opening of the second session. His absence made little difference, however, as the preparations had all been made. Moreover, Luce was still around to make any last-minute arrangements. His flagship, then the screw steamer *Tennessee*, remained in Narragansett Bay until late September of 1886.

The second course of instruction began on 6 September 1886 with brighter prospects than the year before. Since the first course had been successful, friends had been made in and out of the naval service. The college was housed in a satisfactory building, and it enjoyed the sponsorship of Commodore John G. Walker, Chief of the Bureau of Navigation, who readily ordered to Newport the lecturers whom Luce had chosen from the naval service.

The majority of the student officers were again those who had recently completed the course at the Torpedo School, but their attitude this year was far different. The class was composed of two commanders, 11 lieutenants, six ensigns, and two officers of the Marine Corps. In addition, officers from the flagship *Tennessee* attended while the ship was in port.

Luce gave four lectures during this session, including improved versions of two of the previous year. In another, delivered on 9 September, he spoke of the moral effect of victory as illustrated by the battle between the *Merrimac* and *Monitor* during the Civil War. This lecture was repeated a decade later in *Naval Actions in History, 1799-1898*, published by the Military Historical Society of Massachusetts, volume 12 (Boston, 1902).

The session of 1886 ran until 19 November. The subjects of the lectures included naval history, naval gunnery, international law, naval tactics, seacoast defense, Columb's war game, naval staff duties, the Battle of Gettysburg, and McClellan's Peninsula Campaign.

During the first 10 days of the

course, the presence in the harbor of the flagship *Tennessee* allowed some practical gunnery and spotting exercises, which were witnessed and at times conducted by officers attending the course. Launches in charge of student officers were also used to illustrate ramming tactics, relative speeds, and turning circles.

The 1886 session ended Luce's direct connection with the Naval War College for almost two decades. For the next 6 years its story is Mahan's, recorded by him and his biographers. But, as Luce's letters show, its founder was ever watchful of the institution and ever ready to come to its aid or defense. Otherwise his efforts were mainly directed to obtaining outstanding lecturers for it from the long roster of his scholarly friends.

The War College comprised only the theoretical part of Luce's plan for higher education for naval officers. He wanted to supplement this by a naval squadron of evolution which would form the laboratory where the theoretical work of the college would be tested. This was why he was so ready to turn the fledgling college over to Mahan. He hoped to spend his last years on active duty in reorganizing and training the North Atlantic Squadron to this purpose. His efforts in this regard, however, were to come to naught. There were several contributing reasons for this; the ships then available were largely unsuitable for this work, and conditions in Canadian and Caribbean waters put demands on the squadron which, to a large extent, kept it scattered. But the major factor was his unfortunate feud with Secretary of the Navy Whitney over the Canadian fisheries dispute between the United States and Great Britain.

Instead, the first naval "squadron of evolution," so-called, would be commanded by his friend, John G. Walker. This was the name given to the European Squadron in 1889 and 1890 when it was composed of the new cruisers *Atlanta, Boston, Chicago,* and the gunboat *Yorktown.* Its function was not what Luce had envisioned but rather to demonstrate in tangible form the awakening of the American people to their Nation's new role as a world power.

Thus Stephen B. Luce made an important contribution to the founding of the Naval War College. Having grasped the possibilities of such an institution by observing other military schools of similar purpose, he expended a considerable portion of his personal influence and reputation to establish it. With the aid of such men as Mahan and Soley, he brought to life the concept of a war college for naval officers which was dedicated to increasing their knowledge of their profession. Although his creation did not gain a universally recognized place in the structure of the Navy Department until after his departure, Luce nevertheless deserves credit as a driving force in its establishment.

BIOGRAPHIC SUMMARY

Rear Adm. John D. Hayes, U.S. Navy, (Ret.), is a graduate of the U.S. Naval Academy in 1924, holds a master's degree from the University of California, has done advanced work at the U.S. Naval Postgraduate School, and has attended the Army and Navy Staff College, the Naval War College, and the Industrial College of the Armed Forces. During his naval career he served on the staffs of the 3d and 7th Amphibious Forces in the Pacific in World War II and commanded Service Squadron 1 during the Korean war. As a retired naval officer, Rear Admiral Hayes resides in Texas City, Tex., where he is active as a writer on modern applications of seapower for professional military and naval periodicals.

THE SOVIET PRESENCE IN THE MEDITERRANEAN: A SHORT HISTORY

This article originally appeared in the French "Revue de Défense Nationale." It is reprinted here with the kind permission of the editors of that publication as a valuable addition to the growing body of literature concerning the naval activities of Russia in the Mediterranean Sea. The translation is complete except for certain tabular data and appendixes which were omitted due to the limitations of space. Near the end of the article, several sentences have been omitted since they dealt with speculation on matters which have been overtaken by events. These remarks were not central to the authors' thesis, and it was felt that the judgments as expressed could only detract from the consistently excellent quality of MM. Masson and Couhat's presentation.

by

Philipe Masson and J. Labayle Couhat

(Translated by Lieutenant Commander Gary G. Sick, U.S. Navy and Karlan K. Sick)

The presence of a significant Soviet naval force in the Mediterranean seems to represent a new element in international relations. However, it is intriguing to recall that the first Russian efforts to penetrate these waters occurred exactly two centuries ago.

The first appearance dates from the Russo-Turkish War of 1769-1774. Two years before the first division of Poland, the Empress Catherine, treading in the footsteps of Peter the Great, wanted to give Russia access to the Black Sea at the expense of the Ottoman Empire, which still controlled the coasts. Although the principal military operations took place on land in southern Russia and on the Sea of Azov, the expedition of an important naval force from St. Petersburg to the Eastern Mediterranean was regarded as a potent diversionary maneuver in the framework of Catherine's "Greek Plan." After a 6-months' voyage, the Russian squadrons, under the command of Count Orlov, reached the shores of the Peloponnesus. Their principal objective was to assist the Orthodox Greeks in their revolt against the Turks. As it turned out, Orlov's mission was never fulfilled. The Russians were unable to seize the strategic Greek ports, and the revolt was drowned in blood by an army of Turkish reenforcements. However, the Russian Fleet, with the aid of fire ships, succeeded in destroying the Ottoman Fleet at Cesme near the island of Chios on 19 July 1770. Then, as masters of the Aegean, the Russians first tried, without success, to force the Dardanelles, then limited themselves to a blockade. They also harassed Turkish shipping, ravaged the coasts, and attacked certain ports, including Beirut.

Orlov did not leave the Mediterranean until 1774 after the Treaty of Kuchuk Kainarji which ceded to Russia considerable territorial gains (including Azov) and guaranteed freedom of navigation for Russian merchantmen in the Black Sea and Turkish Straits.

This expedition, which lasted nearly 5 years, produced a considerable impression in Europe, if only for its size: three squadrons had appeared from Kronstadt, consisting of a total of 23 ships of the line, 12 frigates, and seven smaller attack vessels, not including several dozen transports with several thousand soldiers embarked. Among the nations of the Mediterranean, concern was high. Venice, Dubrovnik, and Malta refused to receive the Russian ships. In France the expedition was regarded as very dangerous, not only for Turkey which was then supported by Versailles, but also for the general balance of power in the Mediterranean. The Duke of Choiseul briefly considered intercepting the first Russian squadron in the English Channel or just outside Gibraltar.

British support of the Russian forces also disturbed the French. The English, whose Mediterranean policy was not yet firmly established, provided vital assistance to the Russian ships. The latter, hurriedly armed, often in bad condition, and fitted with improvised equipment, found the excellent facilities of the British ports of Portsmouth, Gibraltar, and Port Mahon at their disposal. Moreover, the English had actively participated in the creation of the Russian Fleet. A number of British officers served on board these ships; Admiral Elphinstone was an Englishman. It was he who directed, in spite of Orlov's misgivings, the attack of the fire ships at Cesme. Despite all this, the Russians displayed serious inadequacies which were, as it happened, amply compensated for by those of the Turks. To get some idea of the nature of this war, Frederick II is supposed to have remarked, "It would be necessary to imagine one-eyed men exchanging blows with the blind."

Nonetheless, even if the principal objective of the expedition, the Greek revolt, was not attained, the outcome of the affair had its positive aspects. The expedition had enhanced Russian prestige, considerably embarrassed the Turks, and had facilitated the victories in the Black Sea. However, a lesson could be drawn from this experience: the necessity of having a naval base. And this would henceforth be the objective of the Muscovites.

The second intervention must be seen in this perspective. Russia intervened during the reign of Paul I—on the occasion of Napoleon's Egyptian campaign—after the English victory at Aboukir, Russia joined the Second Coalition with England, Austria, Turkey, and the Kingdom of Naples. In the autumn of 1798, a fleet under the command of Admiral Ushakov entered the Mediterranean for the first time via the Turkish Straits. With six heavy ships and seven frigates carrying 1,200 men, Ushakov ignored Egypt and proceeded to the Adriatic. With the aid of the Albanians, he seized the Ionian Islands occupied by France, most notably Corfu, on 3 March 1799. The Russians presented themselves as the defenders of their Orthodox brethren oppressed by the impious and atheistic French. And at last they had a Mediterranean base. After lengthy discussions, the Constantinople Convention of 21 March 1800 recognized the independence of the Ionian Islands, which became the Republic of the Seven Islands. In reality, the Republic remained under the suzerainty of the Porte, but its territory was guaranteed by Russia which was permitted, in the event of danger, to send troops there. And that is what happened in 1802. Alexander I, with the assistance of Count Capo d'Istria, prepared to annex the islands.

This policy provoked great anxiety on the part of the British. Nelson

deplored the lack of cooperation on the part of the Russians and wrote in November 1798, "It seems to me that they are increasingly preoccupied with obtaining bases rather than chasing Bonaparte out of Egypt."

British apprehension became even greater when Czar Paul I laid claim to Malta, where he became Grand Master of the Order of the Knights Hospitalers. The British refusal to cede the island after its surrender in September 1800 produced a provisional alliance between France and Russia, followed by the formation of the "League of Neutrals." Whatever the intricacies of the affair, at the time of the peace of Amiens the record still showed a positive gain for Russia, for she had established a protectorate over the Ionian Islands.

The final important incursion into the Mediterranean coincided with the Third Coalition. The fleet of Admiral Senyavin, with 10 ships of the line and five frigates, arrived at Corfu from Kronstadt in January 1806. With the aid of the Montenegrins, the Russians seized Kotor fjord and a number of islands off the Dalmatian coast. With the help of the British, they also waged a war against the Turks who, with the support of Napoleon, refused to permit the passage of Russian warships through the straits. A Russo-British attempt led by Duckworth and Senyavin to force the Dardanelles failed in March 1807. The French mission of Sebastiani had succeeded in establishing the defense of the straits.

This abortive partnership served only to reenforce the distrust of the British who discerned the Russian plan: to obtain bases and to dismember Turkey. In August 1804 Nelson had written, "My opinion of Russian ambitions was formed long ago; today I see that all her efforts are directed at the same goal: the possession of all of European Turkey."

The Treaty of Tilsit had the merit of clarifying matters. By virtue of this treaty the French were able to seize Corfu and Kotor. As for Senyavin, who was upset at the British reaction, he departed the Mediterranean precipitously; but his fleet was intercepted "as a precautionary measure" at the mouth of the Tagus River at Lisbon by an English squadron. An agreement permitted the officers and crew to return to Russia; the ships were retained by the British until peace was achieved.

This harsh turn of events, with the loss of the Ionian Islands, marks a turning point in Russian policy. It was the ruin of nearly 40 years' effort. It was also the point of departure for a new British policy.

* * * * * * *

Henceforth, the British attitude was firmly established. Great Britain decided to maintain its command of the Mediterranean with bases in Gibraltar, Malta, and Corfu, which were occupied and held from 1814 to 1864. England also insisted on the neutralization of the straits and assumed responsibility for the protection of Turkey. The integrity of the Ottoman Empire was to become an article of faith in British policy.

As for Russia, in the absence of outlying bases she no longer contemplated action outside the Baltic. The final attempt took place in 1827 at the time of the Battle of Navarino. She tried to obtain recognition of her right of exclusive passage through the Turkish Straits, but not the freedom of passage for all, which could be dangerous to her position in the Black Sea. To attain this goal, she attempted throughout the 19th century to weaken the Porte and to dismantle the Ottoman Empire by lending her support to the Orthodox populations. But all of these attempts to obtain a privileged status in the Ottoman Empire collided with British opposition.

In 1833, thanks to the revolt of Mohammed Ali, Russia obtained by treaty the closure of the straits, in time,

of war, solely to ships moving north. But in 1841 England won the second round. The Convention of Constantinople forbade passage to all warship, even in times of peace.

In 1854 a new Russian attempt to dominate Turkey was even more unfortunate. At the Congress of Paris the closure of the straits was confirmed and the Black Sea demilitarized.

In 1870, thanks to the Franco-Prussian War, Russia reestablished her sovereignty; but at the Conference of London in March 1871 the principle of the closure of the straits was maintained. Five years later a Russian attempt to dismantle the Ottoman Empire resulted in a serious crisis and ended with a new failure. At the Congress of Berlin in 1878, the Treaties of Paris and London were once more confirmed.

The war of 1914-1918 almost gave Russia all she desired. In April 1915 and in March 1916 the Allies, fearing a separate peace, agreed to recognize, upon cessation of hostilities, Russian possession of Constantinople and the straits. However, the Revolution of 1917 permitted these promises to be annulled.

Immediately following the war, French, and particularly British, efforts to control the straits were short lived. The Montreux Convention, signed in 1936 by Turkey, the U.S.S.R., England, and France, accorded a new status to the straits which is still in effect today. Complete freedom of navigation for commercial vessels is recognized in times of peace or war so long as Turkey remains neutral. But it is not the same for warships; their passage must conform to complex rules which limit the number and armament of transiting warships and require advance notification of passage. This agreement, which no longer corresponds to the characteristics of modern ships, gives partial satisfaction to the Soviet Union.

Reappearance of the Russian Fleet in the Mediterranean. Between the two wars, the Soviet Fleet appeared only once in the Mediterranean. This was in 1929 when the battleship *Pariskaya Kommuna* and a cruiser which had been stationed in the Baltic went to the Black Sea. In the course of this circumnavigation, the two ships paid a visit to Brest.

After the Second World War, as soon as the fleet had been partially reconstituted, Soviet ships made some timid cruises out of their closed seas, the Baltic and Black Seas, where they normally operated. If one is to believe the Soviet maritime press of that period, these sorties were considered to be veritable exploits. But in 1955 Moscow decided to build an oceangoing fleet commensurate with the global ambitions of the U.S.S.R. From that time on, Soviet ships ventured out more and more, and an agreement was signed with Albania to construct a base at Vlone. At the end of August 1958, four 1,100-ton submarines of the "W" class and the tender *Atrek* dropped anchor at that port. One year later, four additional submarines of the same class, which also belonged to the Baltic Fleet, and a new 10,000-ton Don class submarine tender came from the Black Sea to Vlone. But political tension between Albania and Russia mounted, and finally in May 1961 this support ship and four submarines left Vlone for Leningrad. The *Atrek* and the other submarines were ceded to Albania. If they still exist, they must be in very poor condition due to the lack of spare parts and qualified personnel and are certainly not operational.* During the Soviet stay in Albania, Vlone was visited several times by units from the Black Sea, including the 20,000-ton Sverdlov class cruiser *Mikhail Kutuzov* in 1957 and the 15,000-ton cruiser *Kubishev* in 1960. It was at approximately this period, or

*Translators' Note: Recent information indicates that at least some of the submarines are still operational and do conduct occasional patrols off the coasts of Albania.

even a bit before, that the U.S.S.R. began to give naval equipment to Egypt; and since that time this aid has never ceased.

In September 1957 the Sverdlov class cruiser *Zhdanov* visited Split in Yugoslavia and later paid a call at Latakia in Syria. In October of the same year, the *Kuibishev* and two destroyers en route from the Black Sea dropped anchor in Split. In 1964 this same port received the visit of the cruiser *Mikhail Kutuzov* and two entirely new 4,000-ton Kashin class missile destroyers.

From 1960 to 1963 numerous vessels going to and from the Black Sea transited the Mediterranean. These ships sometimes sailed alone and at times in groups and in the latter case profitted from the opportunity to conduct several exercises in the Aegean Sea. In September 1962 a Sverdlov class cruiser with two 1,700-ton Riga class destroyer escorts passed through the Turkish Straits and the Suez Canal to join the Indonesian fleet, to which they had been given.

After 1964, units in transit in the Mediterranean made it a practice to spend a number of weeks there, and it is from this period that one can date the almost permanent stationing of a small Soviet force in the eastern Mediterranean. This force included a cruiser, flying the flag of an admiral, sometimes one or two missile ships, some escorts, and some submarines. After the Arab-Israeli War of June 1967, this small force was reenforced by four destroyers from the Black Sea which passed through the straits on the 3d and 4th of June to relieve those ships already present in the Mediterranean. Because of the events that followed, these latter ships remained in the area for some time.

At the end of the conflict, the Soviets decided to enlarge their Mediterranean naval force appreciably. Although the composition varies, these forces generally include one 20,000-ton Sverdlov class cruiser which is occasionally replaced by the *Dzerzhinski*, the only Sverdlov cruiser equipped with surface-to-air missiles; one Kynda class cruiser or a Krupnyy class destroyer armed with long-range surface-to-surface cruise missiles; three to four standard Kotlin class destroyers or Kashin class missile destroyers; three to four Riga, Petya, or Mirka class escorts; three Polnocny or Alligator class landing ships; nearly a dozen long-range submarines, including some "N" class nuclear-powered attack units; and a small number of support ships (oilers, submarine tenders, et cetera, et cetera . . .). Elements of the Naval Infantry, amounting to a battalion of 500 men with light tanks, are sometimes embarked on board the amphibious ships.

The surface ships come from the Black Sea, the Baltic, and even sometimes from the Northern Fleet. The submarines, in contrast, generally come from the Northern Fleet which includes a total of slightly more than a hundred submarines. As in other navies, approximately one-third of these units are operational, one-third are in training, and the last third in repair and overhaul. Thus, by a simple count, it is evident that the U.S.S.R. maintains about one-third of its operational submarines from the Northern Fleet in the Mediterranean. This provides a good indication of the importance which she attributes to that sea.

All of these ships—surface and submarine alike—are relieved every 2 or 3 months, comparable to the ships of the American 6th Fleet.

This Soviet "Task Force," which is now the most important naval formation in the Mediterranean after the 6th Fleet, normally operates in the eastern Mediterranean, sailing between the anchorages of Hammamet off the Tunisian coast, Hurd Bank east of Malta, and Kithira Island off the west-

ern end of Crete. These ships call at Alexandria and Port Said in a schedule so regulated that there are always Soviet units present in both ports, in order to demonstrate their support of the Egyptians or to prevent the Israelis from launching reprisal raids on these sites. Certain commentators have suggested that the Soviets have convinced the Egyptians to grant them base rights in these ports. This, in our opinion, seems impossible. This would, in fact, be entirely contrary to the policy of the Soviet Government which is not at all anxious to find itself the object of criticisms which it has leveled at the Americans for their overseas bases. Moreover, it is doubtful that the states bordering on the southern Mediterranean who are so jealous of their new independence, often won at such a high price, would again accept the presence of foreign bases on their territory. However it may be, the crews of the Soviet ships which call in Egypt and Algeria must find it a welcome break in a deployment which is not always easy. Actually, the Soviet Fleet in the Mediterranean has at its disposal only a small logistic contingent to provide material support for such a large force operating thousands of miles from its home bases. The supply fleet currently accompanying the force, at least from the point of view of provisioning at sea, seems ill suited to its mission. This is due to the fact that the Soviets have placed their first priority in the naval domain on combatant ships. This shortage of specialized logistics ships certainly necessitates a wholehearted effort on the part of the crews to keep their ships constantly in good condition. And it tends to prove that the Soviet ships are very rugged.

How is this fleet going to evolve in the course of the next several years? It doesn't seem likely that it will grow numerically. Rather, its offensive power is probably going to increase very significantly as the numerous ships under construction in the U.S.S.R. enter into service. According to well-informed Western sources such as *Jane's Fighting Ships*, *L'Almanacco Navale*, and *Weyer's Warships of the World*, there should be presently under construction in Soviet shipyards half a dozen Kresta class missile-equipped cruisers, as well as various classes of nuclear submarines, whose annual construction rate could reach four to six units.

Moreover, it is now known that the Soviet Navy possesses two helicopter carriers. The first, *Moskva*, is undergoing trials, while the second, *Leningrad*, is in the process of completion.* These two ships were constructed in the Black Sea at Nikolaev, at the mouth of the Bug River, where the Soviets have very extensive naval shipyards which specialize in the construction of commercial and war ships. *Moskva* and *Leningrad* are helicopter cruisers resembling the French *Jeanne d'Arc* but much larger. Their displacement would equal at least 20,000 tons. Their forward deck is occupied by antisubmarine weapons and at least two surface-to-air missile launchers. The after-deck is approximately 90 meters long and is fitted out for aerial takeoff and landing operations. Beneath the flight deck there is no doubt a hangar deck served by one or two elevators. Each of these ships could carry from 20 to 30 helicopters. . . .

One can thus expect that the Soviet Fleet in the Mediterranean will eventually consist of a helicopter carrier, two or three Kynda or Kresta guided missile cruisers, and a flotilla of nuclear submarines, all supported by a logistical force well adapted to its mission.

Conclusion. What significance can we ascribe to this very considerable increase in the Soviet naval potential in the

*Translators' Note: This article was published in early 1968 before the first appearance of *Moskva* in the Mediterranean.

Mediterranean? It is both political and military.

On the political level, following the tradition of the old navy of the czars, the U.S.S.R. desires first of all that everyone grow accustomed to the presence of Soviet ships in the Mediterranean, particularly the eastern Mediterranean, an area in which Russia has manifested an interest since the end of the 18th century.

This force also contributes, together with military aid and the presence of Russian technicians, to the reenforcement of Soviet influence in the region of global strategic importance, the Middle East. The U.S.S.R. is clearly determined that these nations should not fall into the orbit of another power. Like their counterparts in old Russia, those responsible for Soviet foreign policy know how to take the long view, and in their calculations they have certainly taken into account the possibility of a conflict with China. In such an event, since the umbilical cord of the Trans-Siberian Railway would be seriously threatened, the Suez Canal would be the most rapid route for the movement of troops and materials to the Far East. This is why the U.S.S.R. insists that the canal remain under the control of a power which is in no way hostile to it. Of course the canal is currently closed to navigation, but there is no doubt that the U.S.S.R. favors its reopening. Its closure effectively requires Soviet ships en route to the Far East, and notably North Vietnam, to circumnavigate Africa, which considerably lengthens the voyage.

The presence of a Soviet force in the Mediterranean facing the American 6th Fleet contributes to the creation of an equilibrium in this region which is so sensitive in world affairs. This was clearly apparent during the Arab-Israeli War of 1967. During the entire crisis, Soviet units, including two Kashin class missile destroyers, constantly followed—either closely or at a distance—the diverse movements of the American ships. As a result, the Soviet Government was always informed on the air activity of the 6th Fleet. Thus it was able to verify how little foundation there was for Arab allegations accusing Anglo-Saxon aircraft of assisting the Israelis. This verification certainly weighed heavily in its analysis of the political situation.

On the military level, in the event of a conflict which today seems relatively improbably, in which the U.S.S.R. and the United States would risk becoming involved, the Soviet squadron in the Mediterranean would have the mission of countering the powerful 6th Fleet. This would no doubt be a suicidal operation; but in order for it to occur it would also be necessary [an eventuality which is far from certain] for the American force to remain in the face of an imminent nuclear exchange in that trap, the Mediterranean. Since the appearance of strategic missiles, and despite the fact that it continues to retain a nuclear strike capability, the principal role of the 6th Fleet has, in fact, been played in the domain of "limited war," for which it has decisive means at its disposal.

In reality, the most dangerous menace is that of the naval air forces which the Soviets have placed and continue to place at the disposition of the states on the southern and eastern shores of the Mediterranean. For these states, without calculating all the risks, could one day be tempted to use these forces to bolster a crumbling power position or out of an exaggerated concern for their own prestige.

Ψ

It has long been assumed by naval aviators that there are distinctive personality differences between patrol, attack, helicopter, and fighter pilots. In this research project the authors document those differences and suggest how they might apply to future air safety programs. (The authors gratefully acknowledge the help of Comdr. Quentin S. Meeker, U.S. Navy, and they are also indebted to the following for suggestions and criticisms: David R. Abel, James C. Aller, Gordon H. De Friese, Donald P. Hayes, William W. Lambert, William J. O'Connor, Phillip J. Scott, Everett Vernon, and Thomas H. Williams.)

FLYING AND EXPRESSIVE SELF-TESTING:

AN EXPLORATORY CONSIDERATION

An article prepared

by

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INTRODUCTION

While no one would dobut the seriousness of the occupational roles within the field of military aviation, it can be argued that the expressive attitudes held by military aviators must be given explicit consideration whenever the attempt is made to deal with such problems of command as recruitment, assignment, retention, and safety. The present study reviews expressive self-testing attitudes held by 60 naval aviators drawn from four military aviation specialties, and it shows that expressive self-testing attitudes vary with the specialties of pilots. Furthermore, it suggests that further research in this area would be useful in developing a new attack on problems of safety.

It is probably the case that many of the expressive attitudes displayed by military aviators are not greatly different from those held by participants in various forms of expressive travel. The expressive travel complex has high salience in American culture, and future culture historians may well note the remarkable florescence in expressive travel which began in the 19th century and which may not yet have reached its climax. Expressive travel includes all forms of travel employed by persons in moving from one place to another for nonutilitarian and recreational reasons, and the list of current patterns is almost endless with motorcycle riding, hiking, skiing, mountain climbing, skating, horseback riding, swimming, surfing, water skiing, sailing, gliding, and many

other forms as well. Expressive travel, however, also includes trips made for utilitarian purposes when an expressive element is plainly discernible as when a man uses an expensive sports car in making the routine trip from home to office through suburban and city traffic. Some forms of expressive travel are also spectator sports as is the case with automobile racing, skiing competitions, and boat races. There are other aspects to expressive travel as well, but it is enough here to say that the total American involvement in expressive travel is a mass phenomenon entailing the expenditure of vast resources.

The numerous forms of expressive travel seem to have many features in common. All appear to involve physical skill on the part of participants, although the degree of skill may vary from slight to great. Most of the popular activities, such as skiing, require the development of great competence before the highest standards of excellence can be reached. Very importantly, virtually all forms of expressive travel entail some physical risk, if nothing more than the sprained ankle which has plagued many an ice skater, and some forms of expressive travel are plainly dangerous. There is always a complex interaction between physical competence and danger in expressive travel, for highly competent travelers can often cope with environmental hazards (such as steep rock faces for the climber) which would defeat the beginning amateur.

Specific travel patterns in the larger travel complex, however, are not equally available to everyone. Economic, health, and other reasons prevent people from being the yachtsmen, the mountain climbers, or the skin divers that they might like to be. Furthermore, the way in which the traveler functions within a specific pattern may be regulated by law or by rules enforced by private individuals or organizations. There are, then, constraints to participation in expressive travel. This last circumstance may contribute to the recruitment of individuals to occupations which are essentially nonexpressive but which have expressive components such as the occupations of guide, aviator, ski instructor, and so on. Such occupations may provide expressive outlets for persons who could not otherwise satisfy their tastes for specific forms of expressive travel.

Many forms of travel have testing, contesting, and self-testing modes. Ordinarily *testing* is not an expressive activity, but it frequently is used in determining the qualifications of individuals to participate in more expressive patterns as is the case with the conventional driver's test for automobile drivers or with the usual qualification test for swimmers who wish to go into a pool alone. Most of the major forms of travel have *contesting* modes as with automobile races, yacht races, horse races, ski races, and so on, and these are heavily expressive in character for both participants and spectators. Finally, there is a "*self-testing*" mode in which a traveler voluntarily tests his competence at meeting the challenges and risks of the traveling environment as when a driver deliberately uses his skill to pass another car while traveling at a high speed in a situation where there is no real emergency or other requirement forcing him to travel at that speed. In a sense, the "high self-tester" plays with the travel pattern. Perhaps it should be noted that there are other forms of self-testing as well. The person engaged in completing a crossword puzzle is involved in strategic self-testing in contrast to the man who is determining the number of pool lengths he can swim and who is thus involved in physical self-testing. This paper, however, is only concerned with self-testing of the physical type in situations where there is genuine physical risk or danger.

The investigation reported here is part of a more general inquiry into expressive culture, games, power, and

related phenomena.[1] It is also related to a more general study of travel. This particular inquiry, however, is based on an earlier study of expressive self-testing and driving and on an unpublished study of expressive self-testing and skiing.[2] Taken together, these last two studies suggest that within the domain of expressive travel, high and low self-testing attitudes appear to be similar across specific travel patterns. Thus, the boy who was a high self-testing tree climber may be, as an adult, both a high self-testing skier and a high self-testing driver. The simple research design used in this study presumes that there is some generality of self-testing attitudes across expressive travel media.

Any major pattern of expressive travel, however, may be divided into a number of subpatterns, and these may vary in terms of physical risk—ski jumping, for example, may be more dangerous than cross-country skiing. Within any major pattern, those expressive self-testers who must court risk should also be involved in the high-risk subpatterns. When there is freedom of choice, expressive self-testers may sort themselves within major patterns on the basis of preference for challenges involving high or low risk.

This circumstance may hold for occupational fields, such as military aviation, as well. Without considering combat losses, current accident statistics and free interviews suggest that fighter pilots are subject to more risks than attack pilots who, in turn, have a more risky occupation than helicopter pilots and that all three are confronted by more danger of accident than patrol pilots. These four military aviation specialties, therefore, can be arranged ordinarily in terms of risk into the following scale: (1) fighter pilot, (2) attack pilot, (3) helicopter pilot, and (4) patrol pilot. The first three categories, of course, are carrier based, while the last is land based. It is the major hypothesis of this exploratory study that this same scale is also associated with appropriate expressive self-testing attitudes with fighter pilots displaying the highest and patrol pilots the lowest self-testing attitudes. In other words, the pilot scale of physical risk should be positively associated with other self-testing scales.

Military assignment is often involuntary and arbitrary. Yet it can be argued that those pilots who were initially selected for a specialty, who have been socialized for a substantial number of years within the specialty, and who have had successful careers within the specialty are likely to have expressive attitudes which are congruent with the natural and social environment defined by the specialty. Thus, the pilot scale already defined should hold as an expressive self-testing scale for mature pilots who have constructed professional careers for themselves within their specialties. These relationships, of course, need only be statistical, and any given individual might display quite variant attitudes.

It was decided to test the hypothesis that the pilot scale is also an expressive self-testing scale by administering an instrument designed to elicit expressive self-testing attitudes to *all* of the naval pilots in each of the four categories who were present in a single class at the Command and Staff School of the Naval War College. Sixty pilots were interviewed—10 fighter pilots, 21 attack pilots, six helicopter pilots, and 23 patrol pilots. This is a small sample, and the distribution among categories is not all that might be desired. Its characteristics, however, are those of the population of pilots in the four categories existing in the class, and they are not the result of bias on the part of the investigators.

Certainly the respondents were well schooled in their specialties. These pilots were either junior commanders or senior lieutenant commanders with 12 to 14 years' service, and they were in

their mid-30's in age. They were part of a highly selected group of officers destined, at least on a statistical basis, for higher command. In a general way, they could be said to be matched as far as the attributes of intelligence and competence were concerned, an important consideration for this study. In anthropological language, each of the 60 respondents was a highly qualified key informant on his own subculture, and each would, in the future, help shape the military environments experienced by yet younger aviators.

The survey instrument employed in this research is too long to be reproduced here. Basically it was divided into three sections: (1) questions related to expressive self-testing and to expressive culture, (2) questions pertaining to judgmental accentuation (to be defined), and (3) questions related to flying situations in which expressive attitudes might be mobilized. Since the flying experience of the pilots in the four specialties was actually quite diverse, it was difficult to frame questions about flying which were equally meaningful for each of the four specialties. The automobile, however, represented a common denominator, for all of the respondents were drivers and all were familiar with American driving culture. For this reason, many, but not all, of the questions in the instrument dealt with driving or automobiles in one way or another. Properly speaking, other features of the instrument should be explained in this introductory section as well, but it is easier to provide additional information and to explain the analysis of the data in the discussion of the results of the study which appears in the next section.

The instrument was administered early in 1970 to each respondent individually by a patrol pilot who was also a fellow student. The lengths of the interviews varied from approximately 20 to 45 minutes. All of the respondents were cooperative, and the quality of the interviews appears to be high.

In this study the hypotheses have been stated in advance. These are, in general terms, the following: (1) a high position on the four-level pilot scale will be associated with a high involvement in general expressive self-testing, while a low position will be associated with low involvement; (2) a low position on the pilot scale will be associated with high judgmental accentuation in response to stimuli indicating threat while a high position will be associated with a low judgmental accentuation; and (3) a high position on the pilot scale will be associated with an expressed willingness to crowd or press regulations in a hypothetical flying situation, and a low position will be associated with the opposite. In other words, high-risk pilots should contrast with low-risk pilots in engaging in expressive self-testing, seeing little threat in situations where others see a great deal, taking chances, and crowding regulations.

RESULTS

Expressive Self-Testing. The instrument contained two questions about automobile driving (the common denominator for the pilots) which had been tested in earlier research. Respondents were asked to circle numbers reflecting their choices on seven-point scales ranging from −3 (unhappy) through 0 (neither) to +3 (happy). The explanatory material also equated happiness with enjoyment. The first scale was described as applying to "Passing other cars while driving at moderately high speeds," and the second pertained to "Driving at very high speeds." It was predicted that there would be a positive association between the pilot scale and each of these expressive driving scales. The association was measured by the Goodman-Kruskal coefficient of ordinal association, since in each case the association between ordinal scales was being determined. Table 1 presents the distribution of responses to these

TABLE I—PILOT SCALE AND EXPRESSIVE DRIVING SCALES

Pilot Scale	Happy +3	+2	+1	Neither 0	−1	Unhappy −2	−3	G	p one-tailed
Passing at Moderately High Speeds									
1. Fighter	2	3	3	2	0	0	0		
2. Attack	0	7	4	7	2	1	0		
3. Helicopter	0	0	3	2	0	1	0		
4. Patrol	0	1	3	13	3	1	2	+.560	.00007
Driving at Very High Speeds									
1. Fighter	2	3	1	3	0	1	0		
2. Attack	2	2	4	6	3	4	0		
3. Helicopter	0	1	1	0	2	1	1		
4. Patrol	0	3	1	6	2	5	6	+.450	.0007

questions, and it shows that the predictions were confirmed.

A third question which had also been used in earlier research dealt with an attitude toward life:

> Assume that you are approaching retirement after 20 years of military service. "Thinking ahead to my future, would I be happiest if I were the master of an occupation which might at times involve physical hazards?" Unhappy −3 −2 −1 0 +1 +2 +3 Happy.

Once again it was predicted that this scale would be positively associated with the pilot scale. This was confirmed by a coefficient of ordinal association of .348 ($p = .0071$, one-tailed). The coefficients are higher, of course, if the pilot scale is collapsed into high risk (fighter + attack) and low risk (helicopter + patrol): passing at moderately high speeds, $G = .603$; driving at very high speeds, $G = .508$, and future physical hazards, $G = .439$. The prediction, then, that the pilot scale would be positively associated with expressive self-testing scales was confirmed.

Although collateral research has linked game preferences with self-testing attitudes, inquiry in this direction was not rewarding. High-risk pilots, however, manifested more of a preference for fortunism or chance than did low-risk pilots. Respondents were asked to indicate their liking for games of each of the three major types by circling the appropriate number on each of three eight-point scales ranging from 0 to 8 (high liking). The physical skill scale and the strategy scale had no significant ordinal association with the pilot scale, but there was one with the chance scale ($G = +.275$, $p < .05$ two-tailed). When the upper third (approximately) of the respondents were compared with the lower two-thirds, a pattern emerged. High liking for games of physical skill was defined as 7 and low liking as (0 − 6) with the result that this scale had a directional negative ordinal association with the pilot scale ($G = -.396$, $p < .10$). High liking for games of strategy was defined as (6 − 7) and low was (0 − 5). Here there was a positive association with the pilot scale ($G = .386$, $p < .05$). Finally, high liking for games of chance was (5 − 7) and low was (0 − 4). Here there was a positive association of liking for games of chance with the pilot scale ($G = +.523$, $p < .01$ two-tailed). Since other evidence suggests that the games of strategy preferred by the total group were games of strategy with chance rather than games of pure strategy, the principal conclusion is that the high-risk pilots manifested higher liking for fortunism in

games than did the low-risk pilots. There was, however, only a directional indication that low-risk pilots preferred games of physical skill, and actually 45 of the respondents listed such games as their favorite games. Relatively little should be made of all of this, but in the future the relationship between fortunism and high self-testing should be explored.

A question about interest in safety lectures yielded no significant association, but the low-risk pilots were somewhat more interested in careers in safety. The respondents were asked,

> Assume that being a Safety Officer offered a career pattern that was as successful as others in the services, how much would you like being a safety officer? Low 1, 2, 3, 4, 5, 6, 7 High.

When the respondents were grouped into high liking (5 - 7) as against low interest (1 - 4), this ordinal scale was negatively associated with the pilot scale ($G = -.377, p < .05$ two-tailed). Again, like fortunism, this relationship constitutes more of a hint for future research than a finding for the present.

Still, it was the case that significant associations existed between the pilot scale and three rather obvious questions relating to self-testing. Rather than confirming this result by the additional use of such questions, a much less obvious measure was employed, that of judgmental accentuation to be described below.

Judgmental Accentuation. The technique used in determining judgmental accentuation is simple, but it requires some explanation. Basically it involves nothing more than the conversion of ordinal scales to interval scales and an interpretation of the resulting interval differences. In this instance, three sets of photographs of damaged automobiles representing three levels of severity of damage were used to provide three ordinal scales. It was then expected that the low-risk pilots judge the intervals between the levels to be larger than would the high-risk pilots. In other words, the low-risk pilots would accentuate the differences between strong and weak symbols of threat and disaster.

The point has already been made that automobiles constituted a common denominator for the pilots from the different specialties and that all were familiar with American driving culture. It was thus possible to substitute visual symbols of automobile accidents for visual symbols of airplane accidents in eliciting a set of attitudes linked with accidents. The stimulus photographs used were the first three sets of photographs presented in the *Vehicle Damage Scale for Traffic Accident Investigators* under "Index to Damage Scale."[3] These were the photographs illustrating:

> 1. Severity Scale FC - Front-End Damage: Concentrated Impact. This scale is applicable to damage to midsection of front of subject vehicle resulting from a collision with a tree, utility pole, or other narrow object.
>
> 2. Severity Scale FD - Front-End Damage: Distributed Impact. This scale is applicable to damage to front of subject vehicle due to distributed impact resulting from full contact with any other vehicle or broad object.
>
> 3. Severity Scale FL/FR - Front-End Damage: Partial Contact. This scale is applicable to damage resulting from partial contact of front end (left front corner or right front corner) of subject vehicle with another vehicle or object.

All of the scales, then, pertained to front-end damage, but there was a scale

for concentrated impact, another for distributed impact, and one for partial contact.

Each scale, in turn, was represented on a single page by three two-view sets of photographs showing automobiles damaged in traffic accidents. Each of the two-view sets represented a single automobile which had suffered a level of damage which fitted one of the following descriptions:[4]

> Damage in the top photographs, or sets of photographs, is minor and is generally limited to dents and gouges in body sheet metal and trim. The damage rating corresponding to these photographs is "2."
>
> The second photographs, or sets of photographs, show automobiles that have been moderately damaged, with considerable crumpling of body sheet metal, but little or no distortion of the basic structure or frame. The damage rating in this case is "4."
>
> In the photographs at the bottom of each sheet, vehicles are severely, but not totally, damaged. Sheet metal is severely distorted, torn or crumpled; the basic structure of the car is distorted somewhat; and there is usually some penetration of the passenger compartment. The damage rating is "6."

By using "1, 3, 5, or 7" ratings for damge less or greater than that shown in the photographs (rated "2, 4, and 6"), a user of the scale could select any one of seven degrees of severity to describe how badly a car was damaged, but in this study only the photographs illustrating three levels of severity of damage were used.

It was predicted that high-risk pilots would judge the intervals between positions 2, 4, and 6 to be smaller than would the low-risk pilots. The respondents, then, were asked to use a simple constant-sum ratio scale technique developed by Dudek and Baker to convert the ordinal scale of the photographic levels into an interval scale. This scaling technique had already been used in the measurement of expressive attitudes.[5]

Each respondent was presented with the page containing the photographs for each of the three scales. Cardboard masks were employed to restrict the respondent's view to the two sets of photographs he was being asked to compare. Comparisons were made in response to four questions. With the first question for each comparison he was asked to give the ratio which reflected the comparable levels of damage in the following way:

> 1. You are asked to estimate the relative degree of material damage in the accidents. In other words, how bad was each accident in comparison with the others on the same page. In comparing the cars assume that you have a total of 10 severity votes in noting the damage. The following combinations, therefore, are permissible: 9/1, 8/2, 7/3, 6/4, 5/5; 4/6, 3/7, 2/8, 1/9. The higher the number, the greater degree of damage, the lower the number, the lesser the degree of damage.

The comparisons were always elicited in the following order: (1) set "4" and set "6"; set "2" and set "6"; and set "2" and set "4." Each ratio was recorded as each comparison was made.

The constant-sum ratio scaling technique was then used in computing the score for each of the three sets of three comparisons for each respondent (the geometric mean rather than the arithmetic mean was used in this computation). In all instances the least damaged automobile (scale value "2") was given a

scale value of "1." Then the values for each level ("2" "4," or "6") were averaged across the three different impact sets so that there was an average value for "2" (which was always "1"), "4," and "6."

In addition to the first question dealing with severity, three additional questions were asked:

> 2. Assume that each accident is the result of carelessness on the part of the driver. Please estimate, again on the 10-point scale, the carelessness of each of the drivers in relation to the others.
>
> 3. In section C you are given the following facts:
>
> (1) Each of the three automobiles was driven by a squadron commanding officer.
>
> (2) The accidents were a result of the violation of some regulation conjoined with carelessness on the part of the driver.
>
> (3) All three individuals walked away from the accident without sustaining any serious injury.
>
> You are asked to give your preference, on a 10-point scale, as to which commanding officer you would prefer to lead you into combat in comparison with the others.
>
> 4. In section D you are given the following facts:
>
> (1) You are the commanding officer of a squadron.
>
> (2) Each of the three automobiles was driven by a new pilot reporting to your squadron.
>
> (3) The accidents were a result of the violation of some regulation conjoined with carelessness on the part of the driver.
>
> (4) All three individuals walked away from the accidents without sustaining any serious injury.
>
> You are asked to give your preference, on a 10-point scale, as to which pilot you would prefer to have in your squadron in comparison with the others.

All in all, the respondents provided sets of judgments for each of the four questions, 48 paired comparisons in all. The nature of the judgment varied with the question, for the first question dealing with severity has no explicit projective features—it is simply a matter of judgment. The second question asking about carelessness is projective, but acceptably so. The last two questions pertaining to the commander and to the pilot are extremely projective, and they are largely valuable in that they point to directions for future research—a major case could not be based on the responses to these two questions.

It will be recalled that the scale value of the least damaged of the three cars in any of the scales is always "1." Since the scales have cardinal properties, a scale value of "2" for the next most damaged car means that, in the case of the severity question, it was judged to have suffered twice as much damage as the first, and a scale value of "4" for the most damaged car means that it was judged to have suffered four times as much damage as the least damaged car and twice as much damage as the intermediate car. When the scale values for each level of damage were averaged across the three impact situations, the resulting means provided an average judgment of the degrees of damage.

The average value of the least damaged car was always "1." The average value of the second most damaged car was always intermediate between that of the least damaged car and the most damaged car. The average value of the most damaged car was always the highest, and further discussion will be based on this value—it would have been possible, however, to have conducted the

TABLE II—MEDIAN VALUES FOR MOST DAMAGED CAR

Pilot Scale	Severity Question	Carelessness Question	Commander Question	Pilot Question
Fighter (n = 10)	4.76	2.36	.95	.80
Attack (n = 21)	5.20	2.97	.59	.60
Helicopter (n = 6)	5.26	3.93	.46	.42
Patrol (n = 23)	6.63	4.83	.35	.28

same analysis with the second most damaged car.

The average assessment of the relative damage of the third car for each of the four groups is used hereafter. Table II gives the medians for the distributions of the average values. For the severity and carelessness questions, the medians are above the value of the least damaged car, but for the commander and pilot questions, they are less than that of the least damaged car. Some additional statistics can be listed. The mean responses with the range of responses in parentheses are listed for each question below:

Severity Question:
Fighter, 4.91 (3.25-6.87);
Attack, 5.48 (2.90-10.00);
Helicopter, 5.27 (3.88-6.65);
Patrol, 6.57 (3.26-9.48).

Carelessness Question:
Fighter, 2.91 (1.00-6.77);
Attack, 3.15 (1.00-9.33);
Helicopter, 4.23 (2.03-7.99);
Patrol, 4.56 (1.00-7.95).

Commander Question:
Fighter, .87 (.29-1.60);
Attack, .83 (.08-2.37);
Helicopter, .50 (.15-1.00);
Patrol, .42 (.09-1.00).

Pilot Question:
Fighter, .77 (.32-1.33);
Attack, .87 (.15-5.39);
Helicopter, .42 (.14-.67);
Patrol, .39 (.10-1.00).

All of the median values fall in the predicted order. In two specific instances there is a reversal of the predicted mean values, but these discrepancies, as will be seen, are not a serious matter.

If the full distribution of scores for the severity question is ordered into ranks at .5 intervals, the resulting ordinal scale of 15 ranks is negatively associated with the pilot scale ($G = -.323$, $p = .0052$ one-tailed). If the same is done for the carelessness question, the ordinal scale of 15 ranks is also negatively associated with the pilot scale ($G = -.358$, $p < .003$ one-tailed). These two negative associations fit the predictions.

If the full distribution for the commander question is ordered into ranks at .1 intervals, the ordinal scale of 15 ranks is positively associated with the pilot scale ($G = .443$, $p < .0003$ one-tailed). Finally, with the pilot question the same ordering results in an ordinal scale of 13 ranks which is positively associated with the pilot scale ($G = .425$, $p < .0007$ one-tailed). Again these two positive associations fit the predictions.

The results are equally interesting when the t-Test for independent means is used. The pilot scale can be partitioned into fighter (n = 10) vs. others (n = 50), fighter + attack (n = 31) vs. helicopter + patrol (n = 29), and others (n = 37) vs. patrol (n = 23). Finally, it is interesting to compare fighter vs. patrol (the two ends of the scale). These results are listed below (the means are given in parentheses, and p is always one-tailed).

Severity Question:
Fighter (4.91) vs. Others (5.95), t-ratio = 2.06, 17 df, $p < .05$.
Fighter + Attack (5.30) vs. Helicopter + Patrol (6.30), t-ratio = 2.14, 57 df, $p < .025$.
Others (5.29) vs. Patrol (6.57), t-ratio = 2.73, 49 df, $p < .005$.
Fighter (4.91) vs. Patrol (6.57), t-ratio = 2.97, 21 df, $p < .005$.

Carelessness Question:
Fighter (2.91) vs. Others (3.93), t-ratio = 1.40, 12 df, $p < .10$
Fighter + Attack (3.07) vs. Helicopter + Patrol (4.49), t-ratio = 2.75, 57 df, $p < .005$.
Others (3.26) vs. Patrol (4.56), t-ratio = 2.47, 50 df, $p < .01$.
Fighter (2.91) vs. Patrol (4.56), t-ratio = 2.13, 15 df, $p < .05$.

Commander Question:
Fighter (.87) vs. Others (.60), t-ratio = 2.02, 16 df, $p < .05$.
Fighter + Attack (.84) vs. Helicopter + Patrol (.43), t-ratio = 3.66, 46 df, $p < .005$.
Others (.78) vs. Patrol (.41), t-ratio = 3.54, 57 df, $p < .005$.
Fighter (.87) vs. Patrol (.41), t-ratio = 3.53, 14 df, $p < .005$.

Pilot Question:
Fighter (.77) vs. Others (.60), t-ratio = 1.19, 33 df, $p < .10$.
Fighter + Attack (.84) vs. Helicopter + Patrol (.40), t-ratio = 2.61, 35 df, $p < .01$.
Others (.77) vs. Patrol (.39), t-ratio = 2.52, 46 df, $p < .01$.
Fighter (.77) vs. Patrol (.39), t-ratio = 3.29, 15 df, $p < .005$.

All of the above results fit the prediction with the exception of the two findings at the .10 level (one-tailed), but even these are in the correct direction. It would appear that the grouping of fighter and attack pilots into a high-risk group and the grouping of helicopter and patrol pilots into a low-risk group is the most acceptable grouping. In other respects, the patrol pilots appear to be markedly different from all of the others combined in their responses to these questions.

The overall findings are clear. Low-risk pilots accentuate the severity of damage of the third car, the attributed carelessness displayed by the hypothetical driver of the third car, and the inacceptability of the hypothetical driver as either a commander of their squadron or as a pilot in their squadron. It could be argued, however, that instead of accentuation on the part of low-risk pilots, it is really the case that high self-testers are minimizing their judgments, or both. If the accident scale is an interval scale rather than an ordinal one, the third car should be three times as damaged as the first car. If this is the case, the high-risk pilots come closer to the mark of actual damage than do the low-risk ones. There is no proof of this, however, but it would appear that the differences between high- and low-risk pilots represent judgmental accentuation on the part of low-risk pilots as compared with high-risk pilots.

Conflict Situations in Flying. This third section attempts to deal with self-testing attitudes pertaining to hypothetical flying situations rather than to automobile driving or other matters. No single hypothetical situation could be found which would be equally meaningful to pilots in all of the specialties, but it was thought that the training of these pilots had been sufficiently broad to warrant the conclusion that they could respond to three conflict situations in similar ways if they so desired. These were situations where regulations or accepted procedures would favor caution, but where informal practice and small group norms might support daring.

Before the three situations were presented, the respondents were told:

> In the following three questions there is no correct answer. In fact, I realize that you may have contradictory attitudes toward a question at one and the same time. In other words, in the sense that you may both be willing and

simultaneously unwilling to engage in that activity.

Actually there was no single answer, but rather responses to two approach questions and to two avoidance questions were elicited on the basis of "Low 1, 2, 3, 4, 5, 6, 7 High." The above instruction was followed by the first question:

> You are on a local training flight in a high-performance jet aircraft and an unexpected land fog has moved over your base. After commencing approach, GCA advises that weather is below field GCA minimums. You have not made an actual or practice GCA in three months. There is more than enough fuel to make an approach and proceed to a suitable alternate. You have only $1.15 in your pocket, no clothes, and have dinner guests scheduled to arrive at your home in 2 hours. The field is not forecast to come up until tomorrow morning.
>
> (1) To what extent would you be *willing* to continue the approach?
>
> (2) To what extent would you be *unwilling* to continue the approach?
>
> (3) To what extent would you be *willing* to proceed directly to your alternate?
>
> (4) To what extent would you be *unwilling* to proceed directly to your alternate?

Questions 1 and 4 were considered to deal with approach attitudes, while questions 2 and 3 dealt with avoidance attitudes.

When the two approach questions were averaged, the resulting 13-rank scale of approach was compared with the pilot scale. Here the coefficient of association was positive ($G = .372$, $p < .002$ one-tailed). In other words, as expected, the high-risk pilots displayed stronger approach attitudes than the low-risk pilots. The coefficient of association with avoidance attitudes was negative ($G = -.385$, $p < .002$). Here the low-risk pilots as expected, displayed the stronger avoidance attitudes.

When the distribution of the average approach scores was divided equally into high and low and the distribution of the average avoidance scores was treated in the same way, it was possible to develop four classes arranged in order of probable strength of approach (see table III). Table III shows again that high-risk rather than low-risk pilots display approach, but it also shows that the pilots tended to be either approachers or avoiders (only three pilots were in conflict about the matter). The second of the three questions was the following:

> Your commanding officer has announced that unauthorized aerial combat engagements are prohibited. You as operations officer realize that valuable training is received from this type of exercise and that it helps to bring out the aggressive spirit that is needed for combat pilots. The next day you and your section are returning from making practice bombing runs and are jumped by a sister squadron.
>
> (1) To what extent would you be *willing* to remain in formation?
>
> (2) To what extent would you be *unwilling* to remain in formation?
>
> (3) To what extent would you be *willing* to break and engage the other squadron?
>
> (4) To what extent would you be *unwilling* to break and engage the other squadron?

Here questions 2 and 3 were coded as approach, and questions 1 and 4 were treated as avoidance questions.

TABLE III—APPROACH-AVOIDANCE ATTITUDES AND THE FLYING SCALE

	Fighter	Attack	Helicopter	Patrol	G	p one-tailed
High Approach Low Avoidance	7	13	3	6		
High Approach High Avoidance	1	0	0	1		
Low Approach Low Avoidance	0	0	0	1		
Low Approach High Avoidance	2	8	3	15	.492	.004

With this question, the average of the responses to the two approach questions produced a scale which was positively associated with the pilot scale ($G = +.438$, $p < .0005$ one-tailed), whereas the average of the responses to the two avoidance questions scale was negatively associated with the pilot scale ($G = -.473$, $p < .0002$ one-tailed). Once again high risk was associated with approach and low risk with avoidance.

When the distributions of scores were divided as equally as possible into low and high for approach and again for avoidance, the association of the pilot scale with the resultant four-class scale was quite plain (see table IV). An equally acceptable division of the avoidance distribution would have yielded a stronger coefficient ($G = .628$) but it would only have shown three pilots in conflict (high-high and low-low). The above distribution, however, suggests that more pilots find themselves in conflict about this flying situation than they did in the previous situation.

The third question dealt with a conflict pertaining to a patrol flight where the respondent had to indicate his willingness and unwillingness to take off and to delay or abort the patrol. Here the results were directionally as predicted, but the findings were essentially nonsignificant. It is probably the case, since the findings were directionally correct, that the question was poorly framed, and if it had been pretested it would have been eliminated in the regular instrument.

DISCUSSION

The foregoing results present a consistent picture. The four-class pilot scale is also a four-class self-testing scale. This statement is confirmed by the responses to the driving and hazards of live questions. Then it would appear that high self-testers are more likely to be involved in games of chance and less likely to be interested in careers in safety than low self-testers. With the photographs of damaged cars, high self-testers are less likely to accentuate the degree of damage, to attribute carelessness to the driver, or to reject the driver as a commander or as a pilot to the same degree as the low self-tester. In regard to the last statement, it may be that high self-testers are more accepting of commanders and pilots who have displayed some carelessness, a willingness to crowd regulations, and some luck (after all the hypothetical drivers walked away uninjured). Finally, it would appear from the flying situations that high self-testers are more likely to stretch approved procedures if their self-testing is challenged, particularly if the small group norms are not congruent with the regulations. Low self-testers, of course, are opposite to high self-testers on these variables.

At this point there is no harm in engaging in some speculation. It is

TABLE IV—APPROACH-AVOIDANCE ATTITUDES AND FLYING SCALE

	Fighter	Attack	Helicopter	Patrol	G	p one-tailed
High Approach Low Avoidance	7	12	2	5		
High Approach High Avoidance	1	2	1	1		
Low Approach Low Avoidance	1	1	0	0		
Low Approach High Avoidance	1	6	3	17	.592	.0002

probably the case that high self-testers court physical danger and risk. They may be in conflict about the social system, hence their willingness both to obey and to disobey regulations, which is congruent with their somewhat greater interest in games of strategy. Symbols of threat seem to have less meaning for them.

With fliers these findings may suggest, after further study, that high and low self-testers are sufficiently different to warrant different safety programs geared to each. If the pilots are also representative of high and low self-testing automobile drivers, as very well may be the case, safety and accident prevention programs must take these motivational and expressive differences into account. Certainly a program invented by low self-testers and designed for low self-testers is likely to be relatively ineffective with high self-testers who do not quail in the face of the dangers of the road or air and who may actually court them.

Other unpublished research suggests that the variable of competence should be considered in conjunction with self-testing in accident research. Low self-testers with low competence have their own special accidents (perhaps). Low self-testers with high competence may have relatively few accidents, and this may also be true with high self-testers with high competence. High self-testers, though, with low competence may produce a large percentage of the accidents which are due to driver or pilot error for expressive reasons. This particular approach will be explored in future research, but it had to be preceded by study of the self-testing variable (fortunately there are good measures of competence) before it could get very far.

In a sense, these findings go little beyond the wisdom of experienced fliers, but the self-testing variable may have more extensive and more subtle implications than even they had realized. On the other hand, the present research only deals with statistical tendencies—some patrol pilots, for example, have attitudes very similar to those of typical fighter pilots. Clearly, a great deal of additional work would have to be done before the self-testing variable could be used with individual cases. All the same, the present findings are interesting enough to warrant future investigation of a less exploratory character than the present research.

FOOTNOTES

1. The full list of publications would occupy too much space, but the citations to these studies appear on page 226 of the following source: John M. Roberts and Cecilia Ridgeway, "Musical Involvement and Talking," *Anthropological Linguistics*, v. II, no. 8, 1969, p. 223-246.

2. John M. Roberts, et al., "Expressive Self-Testing in Driving," *Human Organization*, Spring 1966, p. 54-63; John M. Roberts and John W. Fuller, "Competence and Expression in Skiing," (unpublished).

3. *Vehicle Damage Scale for Traffic Accident Investigators*, Traffic Accident Data Project Technical Bulletin No. 1 (Chicago: National Safety Council, 1968).

4. *Ibid.*, p. 2.

5. Frank J. Dudek and Katherine E. Baker, "Weight Scales from Ratio Judgments and Comparisons of Existent Weight Scales," *Journal of Experimental Psychology*, v. L, no. 5, 1955, p. 296-297; John M. Roberts, "Kinsmen and Friend in Zuni Culture: a Terminological Note," *El Palacio*, v. LXXII, no. 2, 1965, p. 38-43; John M. Roberts and Fredrick Koenig, "Focused and Distributed Status Affinity," *The Sociological Quarterly*, v. IX, no. 2, 1968, p. 150-157; Roberts and Ridgeway, p. 223-246.

BIOGRAPHIC SUMMARY

Comdr. James O. Wicke, U.S. Navy, entered the naval service following his graduation from the U.S. Merchant Marine Academy in 1955. After serving a year aboard the U.S.S. *Taconic* (LCC 17), he entered flight training, received his wings in 1958, and subsequently served in several patrol plane squadrons and as a member of the staff of Commander U.S. Naval Forces Europe. During the academic year 1969-1970, he was student in the School of Naval Command and Staff at the Naval War College, where he participated in this research project. Commander Wicke is now assigned to Tactical Air Control Squadron 12.

BIOGRAPHIC SUMMARY

Professor John M. Roberts holds a doctoral degree in anthropology from Yale University (1947) and is a recognized authority on Navaho and Zuni cultures. He has published a variety of books, articles, and monographs and has taught at Harvard University, the University of Minnesota, and the University of Nebraska. He has served since 1958 as Professor of Anthropology at Cornell University. During the academic year 1969-1970, he took a year's leave of absence from Cornell to occupy the Chair of Comparative Cultures at the Naval War College.

Ψ

There are old pilots, and bold pilots, but there are no old bold pilots.

Aviators' saying

Systems analysis is sometimes seen as an effort to quantify with modern data processing equipment all of the factors involved in high-level decisionmaking. In reality, systems analysis includes many nonquantitative techniques which have a wide application to the problems of foreign policy and defense. In light of the fact that there is currently no Government agency which devotes extensive time to an analysis of the long-term effects of foreign policy options, it would seem that systems analysis could conceivably fill an important gap in policy planning.

SYSTEMS ANALYSIS: A MISSING ELEMENT IN FOREIGN POLICY PLANNING

A research paper prepared

by

Mr. Richard F. Norford

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Introduction. In a Cabinet meeting on 6 March 1953, President Eisenhower commented:

> Ever since 1946, I know that all the so-called experts have been yapping about what would happen when Stalin dies and what we, as a nation, should do about it. Well, he's dead. And you can turn the files of our government inside out in vain—for any plans laid. We have no plan. We are not even sure what difference his death makes.[1]

This statement was prompted by the very problem with which this paper is concerned: the inadequacy of our foreign policy planning.

There are many examples that indicate the inadequacy of foreign policy planning or, indeed, raise the question of whether there was any actual planning in the sense of attempting to evaluate the long-term consequences of possible actions. One may well question the extent to which initial U.S. policies in the Middle East relative to the Arab-Israeli situation were based on serious long-range planning consisting of systematic, explicit, and objective evaluation of alternative policies and their implications regarding U.S. interests. Another example has been pointed out by Franklin A. Lindsay in connection with the ending of colonialism in Africa. He states that in the fall of 1960 the U.S. Government required outside assistance to recruit 15 financial advisers for 15 new African states. Lindsay argues that this sudden requirement shows a lack of foresight. Proper planning would have foreseen the need and enabled the

timely recruitment that was necessary in order to provide the advisers with an adequate background in the economic, political, and social structures of the various countries they were to advise.[2]

The need for improved planning in foreign affairs, and in particular long-range planning, has not been without recognition. In an article specifically concerned with planning in foreign affairs, George Allen Morgan said in 1961,

> Long-range planning is in great demand today. It is widely developed in certain aspects of military and industrial planning, and many feel there should be more in foreign affairs. To a considerable extent this is justified, and not as a passing mood but as a constant imperative.[3]

In addition, former Secretary of State Dean Acheson said,

> The central task of a foreign office should be to understand what these forces are [which form and shape the emerging future], to do what can be done to shape them favorably to our interests, and to prepare to deal with them.
>
> This should be the task, but it is not. The principal effort goes into dealing with the overpowering present, the present, which, like the Mississippi in full flood, absorbs the whole energy and thought of those who man the levees.[4]

Although these statements are almost a decade old, the situation does not appear to have been improved significantly, as will be shown.

The above examples and statements indicate a basic need for foreign policy planning that systematically analyzes situations in anticipation of problems in the field of foreign affairs and attempts to determine the best policy for the United States to pursue. Many will agree but will consider the expectation to be utopian. Much useful work can still be done, however, by less than perfect planning.

During World War II, analytical techniques, known collectively as operations research, were used to determine the best way to conduct various types of military operations. Following the war, these techniques were first used in attempts to "optimize" weapon system design. Later, as weapon systems became more complex, as development and procurement costs soared, and as technical alternatives proliferated, it became increasingly necessary to evaluate basic requirements and long-range objectives. Because of the newness and complexity of some system concepts, experience and intuition were not as reliable or as convincing in problems of choice as they had been in the past. However, decisions still had to be made. In addition, because of the longer development times of the newer systems, it was necessary to base decisions on events projected further and further into the future. New analytical techniques were required. The result was the development of a new discipline, systems analysis, which was derived from operations research but which was broader in scope and directed toward possible future events.

The problems involved in making foreign policy decisions are more complex than in the past, and the need for long-range planning may be even more critical in foreign policy planning than in weapon systems development. The foreign policy planner also needs a discipline or an approach to planning commensurate with his problem. Systems analysis, as it has been developed and practiced in the Department of Defense, is applicable to foreign policy planning, and its application would represent a positive step toward reducing some of the recognized deficiencies in foreign policy planning.

Systems analysis is a widely used term, but it is also widely misunderstood. It can mean many things, depending on the intent of the user. Its potential value to foreign policy planning is probably little understood by many in the foreign affairs field because of its popular conception as a highly sophisticated set of mathematical techniques for quantitative analysis. It also is often equated with cost-effectiveness and long-range programing and budgeting techniques. As a result of these misconceptions, the foreign affairs community may deny itself the benefits of systems analysis that have been realized and appreciated in other fields.

Systems anlysis is, in fact, a broad concept which is applicable to many types of planning. It is also an approach to planning that brings into sharp focus those very areas where deficiencies in foreign policy planning are widely recognized. Moreover, these present deficiencies in foreign policy planning are not likely to be significantly reduced by the current approach to analysis in international relations.

This discussion is primarily oriented toward people in the foreign affairs and international relations communities who have little or no understanding of systems analysis as it has been employed in planning by the Department of Defense. Because of the assumed background, the identification of deficiencies and the discussion of the nature and purpose of current analysis in international relations are treated in relatively general terms. However, readers not intimately familiar with these fields should have no difficulty relating to the problem as it is described. Emphasis is placed on the philosophical viewpoint, although some attention is spent on instrumental aspects, particularly with regard to nonquantitative techniques.

Deficiencies in Foreign Policy Planning. "Planning is thinking ahead. Policy planning is the futurity of policy decision, i.e., the development of policies in the light of their implications for the future."[5] "Thinking ahead" and "policy planning" would appear to be basic functions in the foreign affairs community. However, for a variety of reasons, policy planning, and in particular long-range planning that adequately considers "implication for the future," is not satisfied by current practice.

The deficiencies that will be identified are those that can be associated with a fundamental attitude or philosophy toward planning and with the tools and techniques used in planning analysis. Deficiencies attributable to other factors, such as interagency cooperation, intradepartmental organization, budgets, and training, also have been shown to have a significant effect on planning, but their consideration is beyond the scope of this paper.[6]

Based on organizational titles, it would seem that the planning function is adequately recognized. There is the Planning Board in the National Security Council and the Policy Planning Council in the State Department. However, evaluations of the actual operations of these two organizations indicate that real planning is either nonexistent or, at best, only a part-time activity.

The National Security Council was established to "advise" the President on matters of national security. In this role it is concerned only with broad policy implications. It was never intended to be a planning body to originate and to analyze, in depth, the implications of alternative policies.[7]

The fact that the National Security Council is not fundamentally concerned with actual planning has been pointed out by a number of writers. A study by the Brookings Institution pointed out the interdepartmental nature of the National Security Council and the fact that its staff is not in a position to conduct extensive and independent planning studies. The result is that up to the time of the study in 1960, 50

percent of the policy papers discussed by the Council involved "split" viewpoints, but did not ". . . present a clear confrontation of the basic alternative approaches that are involved in the major policy issues."[8] Another evaluation states that the Planning Staff of the NSC is concerned with "planning" only as it relates to making preparations for the NSC. Furthermore, it is argued that short-range problems are of more concern to the NSC than long-range problems.[9] In a comprehensive assessment of how foreign policy is made in the United States, Burton Sapin states that ". . . the primary planning role of the . . . National Security Council has been to focus and occasionally to prod the efforts of the line departments."[10]

By contrast with the National Security Council, the Policy Planning Council of the State Department was established specifically to fill the void in long-range planning. It is a small group of senior officers (usually about 11) charged with looking at long-range trends and attempting to foresee emerging problems. However, the Policy Planning Council is limited in resources and is frequently called upon for routine duties such as speechwriting and the drafting of speeches on current policy. The result is that the Policy Planning Council is able to devote only a limited effort to the analysis of long-term problems.

The situation was summarized in the Brookings Institution study in the following words:

> As a small group of able officers, its members are frequently drafted for operational duties, such as writing speeches and current policy statements. Such activities can be useful in keeping the staff in touch with current affairs, but they have considerably reduced the time available for thoughtful consideration of longer range problems, as have the burdens involved in servicing the Department of State's participation in the National Security Council.
>
> Thus the Policy Planning Staff devotes only a limited portion of its limited resources to the task of long-term, broadly focused consideration of major foreign policy problems.[11]

A more recent attempt to improve the foreign affairs machinery was taken by the President in 1966 when he created three new levels of organization for planning and decisionmaking. This is a relatively recent change, and more time may be needed to make a significant impact on foreign affairs policies. However, recent criticism of the higher level, the Senior Interdepartmental Group (SIG), indicates that planning continues to be a problem. It has been stated, "To make the system work will involve giving the Secretary of State something he has never had: (a) the ability to produce alternatives to the recommendations of his line subordinates; and (b) the ability to plan systematically. . . ."[12] The same evaluation finds encouragement, however, in limited results at the next level, the Interdepartmental Regional Group. This encouragement is based on the limited experience of one Bureau in the Department of State which attempted "systematic analysis of policy alternatives."[13] This is apparently the program that the then Under Secretary of State, Nicholas de B. Katzenbach, referred to as "experimental" in a letter to a Senate subcommittee. In discussing this program Mr. Katzenbach stated that its major weakness was "hard analysis."[14]

Within the last year, and subsequent to the preceding comments, there have been further organizational changes in which the senior group, at least, has been reconstituted and incorporated into the NSC system.[15] The effects of

this additional change remain to be seen.

Another organization in the Department of State that would seem to be involved in planning, or at least analysis related to planning, is the Bureau of Intelligence and Research. Undoubtedly this Bureau does make both intelligence and analysis inputs into the planning that is carried on in the Department. However, it has been pointed out that "... most Bureau analyses deal with current issues."[16] In this regard, although analyses of current events may be inputs to planning, they should not be misconstrued as constituting planning. Another viewpoint regarding the Intelligence and Research Bureau is that the "... 'I' appears to have run away with the 'R.'"[17] It seems apparent, then, that this Bureau is not involved directly in planning nor is it concerned specifically with policy planning analysis.

In commenting on the value of the Planning-Programming-Budgeting System to foreign affairs, Mr. Katzenbach said, "As you will see, the major thrust of my comments indicate that I believe we need more systematic analysis of: -the factors ... upon which policy decisions are based;—alternative courses of action and their possible consequences."[18]

Former Assistant Secretary of State for Eastern Affairs Mr. Roger Hilsman emphasized the failure to recognize emerging problems.

> No nation is so strong that it can dictate the course of history ... one suspects that even our true failures in foreign policy would not have yielded to better organization ... few of our true failures are attributable to bad administration in carrying policy out. Our true failures probably lie more in failing to recognize emerging problems in time to evolve effective policies or in meeting big, hold demanding problems with half measures, timorous and cramped.[19]

The Brookings Institution observed that although many people are involved in long-range planning, much of it is "unsystematic and unsustained."[20]

In talking about the Department of State's responsibilities concerning the foreign policy implications of proposed military policies and actions, former Deputy Under Secretary of State for Political Affairs U. Alexis Johnson indicated a need for increasing ability to analyze and assess policy implications in broader national policy terms.[21]

In discussing some of the factors that limit planning, Mr. Acheson indicated, implicitly at least, a deficiency in "quantitative appraisal."[22]

A good summary of planning needs is provided by Sapin's statement of "... requirements that *any* set of national security arrangements at the presidential level should satisfy."

> Crucial to the policy process are systematic policy analysis, the creative development of policy alternatives, the anticipation of situations likely to become problems if not dealt with forehandedly, and long-range programming and planning. ...
>
> It is of fundamental importance that particular policies and programs be seen in relation to one another, not as a series of separate entities or episodes.[23]

In summary, the preceding statements have pointed out a number of weaknesses and needs associated with foreign policy planning. These deficiencies are not unique to foreign policy planning but, nevertheless, they do exist.

Applicability of Academic Analysis to Foreign Policy Planning. The biggest division in the analysis field is between the traditional and the scientific schools. The approach to analysis employed by the traditionalist school is basically one of contemplation. It emphasizes the value of wisdom enhanced by experience. The analysis process has been described as a constant appraisal of facts in the mind until by some logic an interpretation is developed. Although a highly disciplined mental process may be employed, the shortcoming of this approach is that no one else will be able to duplicate the procedure with other assumptions. Thus it is clear that reputation must play an important role in the traditionalist school.[24] In earlier and less complex days this process may have been adequate, but it certainly seems open to criticism today. No one can be expected to master all of the disciplines and the related data that are now available. Furthermore, many of the new disciplines have been shown to have a significant but hitherto unknown, and even unsuspected, bearing on problems of a social and political nature. Recognition of this weakness in the traditionalist approach is, no doubt, the very reason for the emergence and rapid growth of the scientific school.[25]

The scientific school began to take on perceptible dimensions in the mid-1950's with the advance of decision-making and systems theories. Since then it has added concepts from other disciplines such as communications, economics, psychology, sociology, anthropology, and operations research. Although growing rapidly, the scientific school is still small compared to the total effort in the international relations field.

Work in the scientific school can be categorized a number of ways. Two of the usual types of methodologies are behavioral and normative analysis. The former method basically describes the situation as it is and attempts to predict future events. Normative analysis, on the other hand, seeks to describe how the situation should be in the light of stated goals and objectives. Effort has not been divided evenly between these two areas. Indeed, the fact that the scientific school is often equated with the behavioral analysis shows where the preponderance of the effort has gone.

Behavioral analysis has been labeled both "empirical" and "descriptive" because the effort to date has been to develop empirical data of a descriptive nature. The longer range objective is to use the data describing past behavior to predict likely future behavior in international relations.[26]

Mathematical techniques are being used in behavioral analysis in order to develop empirical relationships. Statistical techniques, in particular, have been important in analyzing existing numerical data. In addition, new efforts are being devoted to the quantification of historical materials previously treated as facts and considered to be incompatible with quantitative analysis. Game theory is being widely employed to analyze conflict situations. Simulation techniques are also being employed to study both the actions and the interactions of states.[27]

Applications of a technique known as factor analysis constitute another example of activity in the scientific study of international relations. Factor analysis is used to identify patterns of variation in data in terms of independent variables, which are often referred to as dimensions. A form of "factor analysis" may be performed mentally by the traditionalist school, but it will necessarily be quite limited in comparison to the systematic approach of factor analysis utilizing modern data processing equipment.

The growth of behavioral analysis has also been accompanied by a number of different approaches and theories intended to describe international behavior from a variety of viewpoints. An

approach of particular interest is called "systems analysis." When the term "systems analysis" appears in the literature associated with international relations, it usually is in the sense introduced by Morton A. Kaplan in *Systems and Process in International Politics* in 1957. However, Kaplan and most others in the field have conceived of systems analysis in a significantly different context than has the Department of Defense. Conception has, quite naturally, been shaped by overall goals, which, in the case of international relations studies, have been concerned with the description of systems and the development of theories of international behavior. In Kaplan's words, "It is the thesis of this volume that a scientific politics can develop only if the materials of politics are treated in terms of systems of action."[28] His primary concern is the analysis of international systems with theoretical development being the objective.

David Easton sheds more light on the social scientist's concept of systems analysis in the preface to his book concerned with an empirically oriented theory of political science. He says that he seeks to present ". . . a framework for the analysis of political systems. . . . It is a form that can best be described as a systems analysis, . . . that will make possible the analysis of political life as a system of behavior."[29]

In recognition of some confusion in the conception and application of systems analysis, Oran R. Young uses the term "systemic" to make a distinction between ". . . 'systems analysis,' a loose phrase referring to a variety of techniques for the manipulation of data, and serious approaches to analysis based on systemic perspectives. . . ."[30] Although a distinction needs to be made, it should be recognized that the choice of "loose" to describe systems analysis and "serious" to describe systemic perspectives is merely a reflection of Young's own area of interest.

Of the recognized figures in the field of international relations, the writings of Charles A. McClelland indicate the best appreciation of the different aspects of systems analysis. He recognizes systems analysis as a methodological tool and as a strategy. He acknowledges its successful application to complex problems in other fields and implies a belief that sooner or later the complex problems in international relations must also be attacked on a systems analysis basis.[31]

Another important aspect of McClelland's writings is a recognition of the need to do more normative inquiry in addition to behavioral studies. It is in this regard that he seems to clearly recognize the problem-solving capabilities of systems analysis and the need for its application in this context to problems of international relations.[32]

The discussion of the behavioral school has shown that its main preoccupation can be characterized by the word "descriptive." Behavioralists have employed empirical methods to turn historical facts into data which have then been analyzed in attempts to explain why certain events happened as they did. Work has been devoted to both research and to theory building and has increased rapidly. However, behavioral analysis still constitutes only a small part of the total analysis effort. In the words of McClelland, when compared to all the work in international relations, the contributions of the behavioral approach are like ". . . 'islands' of research . . . [that] float in a 'sea' of wisdom."[33]

Normative analysis is directed specifically toward change; its purpose is to improve. It ". . . is concerned with how people *should* act in order to achieve better (or best) results."[34] It will, of necessity, require some prediction of future trends and forces and possibly even certain types of events. This is the capability that is being developed, or at least attempted, in the present work of

the behavioralists. The present lack of such capabilities helps to account for the low level of interest in normative study.

The traditionalists would maintain that their discipline has historically provided the background and training necessary for planning and can continue to do so in the future. Furthermore, it seems fair to say that many of them believe that "wisdom based on experience" is not only necessary, but is also the *only* way to analyze complex problems in international relations and to do foreign policy planning. On the other hand, the traditional approach is the one that has been applied up to now, and it has not been able to satisfy all planning needs. It may be argued that many existing planning deficiencies are traceable to organizational problems or to other factors already acknowledged. Nevertheless, it seems clear that the traditional approach alone cannot overcome all the recognized planning deficiencies. This is particularly true of the need for hard analysis designed to systematically define, create, and evaluate all feasible alternatives to broad and complex problems in such a way that areas requiring value judgments are clearly identified.

The scientific school has not argued that its approach can replace wisdom and experience in planning analysis but that it can enhance planning by providing a better understanding of past behavior and by providing some means for predicting future behavior. Although behavioral analysis may, to an increasing extent, be able to provide specific correlations, trends, understanding, and predictive theories, it is not characterized by an overall approach or philosophy that makes it directly suitable for planning analysis. Work concerned with normative analysis is commensurate with planning in the sense of trying to determine how people should act or things should be done in order to achieve certain results. However, normative analysis does not appear to be imbued with a philosophical approach that can fulfill all of the deficiencies of present foreign policy planning.

What Is Systems Analysis? Systems analysis cannot be described in a meaningful way by a simple, short definition. It means different things to different disciplines. However, it is probably safe to say that during the past decade the most popular association of the term "systems analysis" has been with the process of weapon systems development and evaluation. Although employed in the defense industry prior to 1961, it was in that year that former Secretary of Defense Robert McNamara formally instituted it in the Department of Defense. But even this association does not clarify what systems analysis is and how it has been employed by the Department of Defense and the defense industry in general.

Some people seem to consider systems analysis as providing a scientific technique for decisionmaking, while others appear to denigrate it as being merely ". . . a loose phrase referring to a variety of techniques for the manipulation of data. . . ."[35] Each of these viewpoints is probably based more on an emotional reaction than on a true understanding of systems analysis. Such an understanding requires both a philosophical and an instrumental orientation, and both aspects are considered herein. In continuing, it should be noted that all future references to systems analysis will be in the Department of Defense context unless specified otherwise.

Questions have been asked concerning what systems analysis is and what it is not, where it begins and where it stops, what is claimed for it and what is not, and so forth. This situation is illustrated by a remark made by Dr. Alain C. Enthoven, former Assistant Secretary of Defense for Systems Analysis, and the man who inaugurated the

Systems Analysis Office in the Department of Defense:

> Hardly a week goes by that I don't read some fantastic description of systems analysis in the Pentagon. The more I read about it in the public press, the more I get the feeling I must not be doing it. According to some accounts, the essence of systems analysis is the application of computers and fancy mathematics to reduce all issues to numbers with lots of attention to cost and none to effectiveness, and with a complete lack of interest in military judgment or anyone else's judgment.[36]

What, then, *is* systems analysis? Dr. Enthoven has probably had more practice answering that question than anyone else, and he is in the best position to describe its functions in the Department of Defense. For these reasons several of his statements are quoted at length in the next few pages. On one occasion Dr. Enthoven said,

> . . . systems analysis is just one name for an approach to problems of decision making that good management has always practiced. The essence of systems analysis is not mysterious, nor particularly complicated, nor entirely new, nor of special value only to Defense planning. Rather, it is a reasoned approach to highly complicated problems of choice characterized by much uncertainty; it provides room for very differing values and judgments; and it seeks alternative ways of doing the job. It is neither a panacea nor a Pandora's box.
>
> Decisions must be made by responsible officials on the basis of fact and judgment. Systems analysis is an effort to define the issues and alternatives clearly, and to provide responsible officials with a full, accurate, and meaningful summary of as many as possible of the relevant facts so that they can exercise well-informed judgment; it is not a substitute for judgment.[37]

A more formal description is provided by E.S. Quade and W.I. Boucher of the Rand Corporation:

> . . . a systematic approach to helping a decisionmaker choose a course of action by investigating his full problem, searching out objectives and alternatives, and comparing them in the light of their consequences, using an appropriate framework—in so far as possible analytic—to bring expert judgment and intuition to bear on the problem.[38]

Both of these descriptions probably raise the same rhetorical question posed and answered by Dr. Enthoven:

> You might object, "But you're merely describing disciplined, orderly thought; why call it 'systems analysis'?" Most labels are imperfect; this one is no exception. We use the phrase "systems analysis" to emphasize two aspects of this kind of thinking. . . .
>
> There is nothing mysterious about this kind of thinking. Informed men . . . have been pointing out the need for such an approach for years. We are doing it, and we have given it a name.[39]

The preceding statements provide a good overall description of systems analysis. They were quoted at length because it would be difficult to improve on them. They present the picture of

systems analysis as it has been conceived and practiced by analysts in the defense industry.

In pursuing an understanding of systems analysis, an attempt will be made to examine (1) its fundamental nature, (2) its main elements, and (3) what it is *not*.

Fundamental Nature. Six adjectives describe the fundamental nature of systems analysis. They are systemic, analytical, systematic, explicit, objective, and normative.

• Systemic refers to the systems orientation. Systems analysis entails a conscious effort to consider problems or situations as part of larger and broader problems and situations. The systemic perspective is used to provide a general framework for unifying and understanding heterogeneous phenomena.

• The analytical nature of systems analysis indicates the emphasis placed on reducing complex problems to their component parts. This permits each component to be studied by methods appropriate to it. Furthermore, the influence of each component on the total problem or on the system can be evaluated.

• Systematic describes the orderly, methodical side of systems analysis. As Charles Hitch said, the ". . . alternative is unsystematic or piecemeal consideration of problems."[40] The systematic approach inherent in systems analysis attempts to include all aspects of a problem in a methodological procedure. Compared with other types of analysis, and contemplative analysis in particular, the systematic approach is, in some respects, more tedious. Nevertheless, it runs less risk of neglecting some aspect of the problem or some alternative that may eventually provide a better choice. The systematic approach leads to explicit treatment of such aspects of analysis as alternatives, uncertainty, and value judgment.

• Emphasis on being explicit characterizes another component of the nature of systems analysis. Dr. Enthoven actually uses the term "open and explicit" to describe in the Department of Defense:

> An analysis is "open and explicit" if it is presented in such a way that the objectives and alternatives are clearly defined, and all of the assumptions, factors, calculations, and judgments are laid bare so that all interested parties can see exactly how the conclusions were derived, how information they provided was used, and how the various assumptions influenced the results.[41]

• Systems analysis is also, by its very nature, as objective as possible. This really implies an attempt to eliminate purely subjective treatment of problems. It does not mean that analysis should attempt to be completely objective and independent of values. Rather, objective analysis actually aids value judgment by helping to pinpoint exactly where such value judgments are necessary.

• Finally, systems analysis as practiced in the defense industry is normative. Although "normative" is not a familiar term in systems analysis, it is used here to indicate a particular and significant characteristic which Yehezkel Dror has described in the following words: "As developed in 'systems analysis' and 'systems engineering,' the normative approach tries to use, explicitly or implicitly, general systems theory concepts and frameworks in order to improve the operations of a given system or to redesign new and better systems."[42] Emphasis is on "improve," which is the primary reason for utilizing systems analysis.

Primary Elements of Systems Analysis. In a methodological sense,

systems analysis consists of five main elements, each of which is present in every analysis of choice.[43] In briefly reviewing these elements it will be clear that they are basically the steps in a "classical" rational process. However, it will be noted that systems analysis emphasizes two elements (cost and model) not treated explicitly in other formulations of rational analysis.[44]

- Systems analysis was developed to analyze complex problems involving choice and to help establish long-range policies. The first step is to define the problem. This will often require some analysis in order to clarify objectives before attempting to solve the problem.
- The search for, and evaluation of, alternative approaches or policies for accomplishing or pursuing objectives is a fundamental element of systems analysis. The determined and systematic approach used to search for alternatives is one of the factors that helps systems analysis to create alternatives in addition to being a means of evaluating "obvious" alternatives.
- Cost should be interpreted broadly to mean whatever price has to be paid to achieve the objective by a particular alternative. Costs other than money include resources, manpower, morale, and ideology, to name a few.

In addition to the direct cost of achieving an objective, there is the important concept of "opportunity cost." This concept recognizes the fundamental limitation of resources of all types. Whenever resources are applied to the accomplishment of one objective, they are necessarily unavailable for other objectives. Thus the opportunity lost (which is known as the opportunity cost) is another way of measuring the cost of achieving an objective.

Many formulations of the elements of planning or of rational choice do not explicitly mention cost. On the other hand, explicit treatment of cost in the broad conceptual sense is one of the strong points of systems analysis. Conscious treatment of both direct and opportunity costs often results in a redefinition of objectives or an intensified search for other alternatives as costs reach unacceptable dimensions.

- In simplest terms, any framework used to compare and evaluate the consequences of alternative policies and objectives may be thought of as a model. In this context a collection of mathematical equations, either computerized or not, a verbal description such as a scenario, or a graphical representation such as a trade-off curve or a map are all models. Models may also include people as in military and political simulations. In each case, however, the model is ". . . a representation of reality which abstracts the features of the situation relevant to the question being studied."[45]

Explicit treatment of the model (or models) is another aspect of the systems analysis approach that makes it different when compared with the "classical" steps in the planning or analysis process. As Quade points out, models in the sense defined above are necessarily involved in all types of analysis. However, when they are only implicit they are more likely to be inadequate. The explicit model performs the function of enhancing review and permitting various experts to bring their judgments to bear on the problem within a specific framework of reference and analysis. Without an explicit model to provide precise communication, the various participants in an analysis are not able to make judgments in as firm a context. Moreover, an explicit model provides a precise means of reevaluation and change as a result of feedback of information.[46]

- Criteria provide the means for ranking alternatives and for indicating the most promising alternative within the limitation of the analysis. In any complex problem, alternative solutions or policies can usually be ranked by a number of criteria, some of which are quantifiable. Systems analysis will use

quantifiable criteria whenever possible in an attempt to provide objective measures of choice. This does not mean, however, that nonquantifiable criteria are ignored. All criteria pertinent to the choice that must be made should be evaluated.

A number of misconceptions exist regarding the nature of systems analysis. Although the previous section specifically discussed the nature of systems analysis, it still did not confront a number of widely held misconceptions.

Systems analysis is not the same as scientific research. However, it does attempt to use the method of science in the sense of objectivity, explicitness, being reproducible, and treating quantitative aspects quantitatively. The objective of systems analysis is to recommend or to help a decisionmaker make a choice, while the objective of science is to understand. Actually, systems analysis is more like engineering than science. In the same way that engineering uses the results of science, systems analysis uses appropriate theories, data, and techniques from many disciplines in its problem-solving applications.[47]

Accusations have been made that systems analysis attempts to replace judgment in matters of choice. It may be true that certain managers have allowed the results of systems analysis studies to override sound expert judgment, but that is not a fault of systems analysis. Rather, it represents poor judgment by the manager.

If used properly, systems analysis is an aid to judgment, not a substitute. It can be used to clarify those areas where judgment is necessary. In the words of Charles J. Hitch, "Systems analysis should be looked upon not as the antithesis of judgment but as a framework which permits the judgment of experts in numerous sub-fields to be combined—to yield results which transcend any individual judgment."[48]

In pursuit of objectivity, systems analysis quantifies those aspects of a problem that can be quantified. However, there are many aspects of complex problems that cannot be acceptably quantified at present. This does not imply a limit to the usefulness of systems analysis because it is not just a collection of mathematical techniques. Rather, it simply means that other approaches to inquiry are required.[49]

The need for nonquantitative techniques has long been recognized, particularly for problems of long-range planning. Some techniques suitable for this purpose are discussed in the section dealing specifically with instrumental aspects of systems analysis.

Just as systems analysis is not synonymous with quantitative analysis, it is not synonymous with the use of computers. Computers have been used extensively in some aspects of weapon systems analysis, but to equate systems analysis to computer usage implies a basic misconception. Computers have a number of potential drawbacks for systems analysis. There is the danger of spending an undue proportion of time in developing a computer program while neglecting serious analysis of both input and output data. There is a tendency of trying to "fit" problems to available computer programs. There are also the dangers of losing a "feel" for the problem and of "letting the computer do the thinking." There are, no doubt, other dangers.[50] Nevertheless, there are many obvious functions such as high-speed calculation and data storage that computers can do well. In addition, computers make feasible the application of new analysis techniques such as Monte Carlo simulations and numerical methods of problem solving. Computers do have many useful applications in systems analysis, but it should be remembered that their use is not an inherent part of systems analysis.

Considerable confusion arises concerning the relationship between systems analysis, cost-effectiveness, and the Planning-Programming-Budgeting

System (PPBS). The relationship is really very simple. PPBS is a management technique implemented in the Department of Defense for the formulation and review of large, complex programs. It consists of three main parts: (1) a budgeting format relating planned expenditures over some period of time to specified objectives; (2) a management information system to keep track of vast amounts of data in terms of specific programs; and (3) systems analysis as the overall analytical technique for evaluating the programs at all levels. Evaluation includes determining priorities between and within programs and comparing alternative ways of accomplishing specific objectives. Cost-effectiveness is a concept invented as a result of systems analysis. It is a special technique that is employed, when appropriate, to evaluate and compare alternative systems. Basically it is employed to compare the cost of systems having equal effectiveness or to compare effectiveness when costs are equal.

Thus, PPBS is an overall approach to management; systems analysis is the general analytical approach employed by PPBS; and cost-effectiveness is a particular concept that was invented by systems analysis to aid in a certain type of analysis. With this perspective it is clear that systems analysis is not synonymous with either PPBS or cost-effectiveness.

The systems analysis function involves both quantitative and qualitative considerations. It follows that instruments suitable for both types of considerations are necessary. However, as pointed out previously, systems analysis is not a fixed set of analytical techniques, and therefore a detailed discussion of specific techniques is not essential to understanding its nature and applicability to foreign policy planning. This is particularly true of quantitative tools which are obviously available in great numbers and degree of sophistication and which have a generally recognized utility in systems analysis. On the other hand, the availability and potential utility of nonquantitative techniques is not obvious. Therefore several techniques are discussed in general terms in this section in order to provide a better appreciation of the capability of systems analysis to be applied to other than quantitative analysis.

The term "nonquantitative techniques" is used here to refer to analysis techniques that are not fundamentally dependent on explicit quantitative analysis. Three specific techniques are discussed: scenarios, alternative futures, and Delphi. In the case of scenarios and alternative futures, quantitative factors may be used, but the final objective is to arrive at a qualitative description of a state of the world, a particular situation, or sequence of events. Delphi may or may not have as its objective the determination of an agreed upon numerical value. However, even when a numerical result is desired, the process itself is nonquantitative. Rather, it depends on qualitative considerations and subjective appraisal as opposed to objective quantitative analysis. The purpose in briefly discussing these three techniques is to convey the idea that the systems analysis approach continues to be systematic even when "straightforward" quantitative techniques are not suitable.

A scenario is a hypothetical sequence of events. Its purpose is to aid thinking. It can serve as either a stimulant or a disciplinary device. It is used to describe in detail how a situation might come about and to show what alternatives are available to each actor at each decision point. When prepared in detail, scenarios have a number of advantages.[5 1] They add realism to a problem and help the analyst to take into consideration and to keep track of a wide range of factors that would often be neglected without an explicit description of both qualitative and quantitative factors. Psychological, economic, political, military, and cultural factors can all be

included and their interaction shown. This often indicates the futility of trying to arrive at a single quantitative measure of the utility of a policy; also, it helps to show where value judgments are necessary.

A scenario is a particularly useful device for using and combining expertise. An expert can write a scenario within which an analysis is conducted, or several experts can use a scenario as an explicit frame of reference. On a step-by-step basis, the experts can define probable decision points which can then be developed into a multibranched scenario to evaluate in detail each alternative.[52]

"Alternative futures" is a term used by Herman Kahn and Anthony Wiener in *The Year 2000* to describe various possible world contexts in the future.[53] An alternative future is a model of how the world might look at some particular date. It is based upon combining trends and forecasts of economic, cultural, scientific and technical, demographic, political, and other factors. As was done in *The Year 2000*, the concept is to project what is considered the most likely context and then to show variations or alternatives. The alternative futures concept is not the same as forecasting; it goes beyond forecasting. It is the systematic combination of forecasts in many areas into specific and explicit contexts that is the distinguishing feature.

An alternative futures as an aid to analysis has all the advantages discussed for scenarios. It should not be confused with a scenario; an alternative future is static while a scenario describes a dynamic situation. The two concepts can be combined, however, by using the alternative futures as a basis for building scenarios. The scenarios would indicate likely decision points or future situations that will require decisions.

Another concept that has resulted from the quest for a more systematic means of combining expert judgments is the so-called Delphi technique. E.S. Quade has described it as follows:

> The Delphi technique attempts to improve the panel or committee approach in arriving at a forecast or estimate by subjecting the views of individual experts to each other's criticism in ways that avoid face-to-face confrontation and provide anonymity of opinions and of arguments advanced in defense of these opinions. In one version, direct debate is replaced by the interchange of information and opinion through a carefully designed sequence of questionnaires. The participants are asked not only to give their opinions but the reasons for these opinions, and, at each successive interrogation, they are given new and refined information, in the form of opinion feedback, which is derived by a computed consensus from the earlier parts of the program. The process continues until further progress toward a consensus appears to be negligible. The conflicting views are then documented.[54]

One of the drawbacks during development has been the time-consuming procedure involved with the use of questionnaires. However, as noted by Quade, this problem could no doubt be overcome by the use of multiple-access, time-sharing computers. Although still under development at the Rand Corporation, the technique is considered particularly promising for the investigation of political and social problems.

Applicability of Systems Analysis to Foreign Policy Planning. In 1961 Defense Secretary Robert McNamara recognized a need for more and better planning to assist in making difficult choices; he appreciated the potential of

systems analysis for meeting the need; and he inaugurated a determined systems analysis approach to defense planning. It is significant that the formally established Office of the Assistant Secretary of Defense for Systems Analysis has been continued under the two succeeding Defense Secretaries, Mr. Clark Clifford and Mr. Melvin Laird.

Although it is not possible to prove the value of systems analysis to foreign policy planning, it is possible to reason its applicability. Some degree of applicability should already be apparent, in at least a general sense, based on the discussion in preceding chapters. Nevertheless, the following discussion confronts the issue directly in terms of congruence of purpose, inherent relevance, and capability to be applied.

The futuristic orientation of policy planning has always been readily accepted (at least as a goal if not a fact). Systems analysis, on the other hand, has not been so clearly associated with a futuristic orientation, and, indeed, much systems analysis effort is concerned with near-range rather than long-range problems. However, this is also ture of policy planning as previously noted. Regardless of where the bulk of the effort has been placed, the fact remains that systems analysis has been used extensively in long-range planning in the Department of Defense during the sixties. As stated by Dr. Enthoven, the purpose of systems analysis is "... to provide decision-makers with a full, accurate, and meaningful summary of the information relevant to clarify defined issues and alternatives."[55] Therefore, and this is the significant point, when systems analysis is employed for long-range planning, its *basic* purpose is the same as that of policy planning as defined by the Policy Planning Council: "... the development of policies in the light of their implications for the future."[56] Congruence of purpose, therefore, is a consequence of application and, in the context being discussed, obtains whenever systems analysis is applied to planning problems.

Probably the most commonly expressed reservations regarding the capability of systems analysis to be applied in a meaningful sense to foreign policy planning are concerned with the scope of quantification. The value, and even wisdom, of quantitative analysis in the fields of international relations and political science is the focus of considerable debate. Much of the criticism appears to be reactionary and protective of the traditional approach.[57] Some see quantitative analysis as a waste of time, but not necessarily harmful.[58] Others see it as constituting a real threat to our understanding of significant qualitative factors.[59]

It seems that much of the criticism results from shortsightedness. No doubt there have been some poorly conceived mathematical models built and some bad analysis based on "quantifying the unquantifiable"; no doubt some investigators have become so mesmerized by their models that serious analysis has suffered; but these failings should not obscure the real value of quantitative analysis.

Quantitative considerations are inherent in all types of policy analysis in terms of ratio, interval, or ordinal scales of measurement. Therefore, the question is not whether or not to have any quantitative analysis but, rather, how much? There are no simple answers to such a question. Dr. Enthoven said that systems analysis attempts to quantify that which is quantifiable.[60] But this does not answer the question of what is quantifiable. Professor J. David Singer predicts:

> Within a decade, almost every graduate school in the country will have some faculty who have been trained in scientific method, and assertions to the effect that 'you can't quantify diplomatic variables,' or 'international

> politics are too complicated to be treated scientifically' will sound as absurd as they now do when said of biology, psychology, or economics.[61]

Professor Singer belongs to the "scientific school" and can be expected to have that viewpoint. Nevertheless, it has often been possible to convert a "qualitative" property of one era into meaningful quantitative terms in another era.

Many people who believe that quantitative analysis is not applicable to international affairs readily admit its utility in defense planning. This results from a conception that defense analysis involves relatively straightforward calculations involving factors having known numerical values. Although this is true of many problems, it is not the general situation. This thought implies a lack of real understanding of just how far systems analysis has advanced in the Department of Defense. Many problems are now attacked that have highly subjective elements in them. This is particularly true of deterrence and counterdeterrence studies. For example, the allocation of resources between strategic offensive forces and active and passive defensive capabilities depends on subjective appraisal of enemy intentions (as well as estimated capabilities) regarding a first strike as opposed to a second strike. Another highly subjective element is the possibility of a period of mutual constraint or metered exchange of weapons in a nuclear war as opposed to an all-out spasmodic exchange. These and other subjective elements enter into all studies of this type with the result that straightforward "solutions" are never found. Nevertheless, in the process everyone gains new insight into the problem. This fulfills the fundamental purpose of systems analysis whether or not a final and agreed upon quantitative answer is obtained.

Just as systems analysis has been capable of application to problems in defense planning that have involved highly subjective elements, so it can be applied to problems in foreign policy planning. Meaningful insight into complex problems can still be provided even when relatively simple quantitative "answers" are not practicable. Not only are some techniques already available for systematic analysis of nonquantitative variables, but others are being developed. Application would accelerate the development process. Indeed, a characteristic that has distinguished the systems analysis approach is the readiness to understand and to employ techniques developed in many diverse disciplines and to devise new techniques when necessary. The result is that systems analysis is capable of being applied to problems of foreign policy planning as well as defense planning; applicable analysis tools are available, and, in addition, new tools of planning analysis can be adapted or devised when necessary.

Summary and Conclusions. Systems analysis, as it has been developed and utilized in the Department of Defense for planning, is applicable to foreign policy planning and its application would represent a positive step toward reducing some recognized deficiencies in foreign policy planning. Based on the statements of recognized authorities in the international affairs community, it is clear that such deficiencies do exist in the planning of foreign policy. There is a lack of hard, sustained, and systematic analysis that provides adequate consideration of alternatives, adequate clarification of issues, and an examination of the systemwide impact of policies. In addition, foreign policy planning has been deficient in timely anticipation or recognition of emerging problems.

Examination of the analysis being performed in the academic field of international relations shows that it is not characterized by the basic approach necessary to significantly reduce the

noted deficiencies. The predominant portion of the analysis is of the traditional contemplative type which is rooted in history, logic, and philosophy. While undoubtedly vital to foreign policy planning, this is essentially the approach used today in the foreign affairs community, and it has been shown to be inadequate (but not inappropriate).

Most of the remaining academic analysis is in the behavioral branch of the so-called scientific school. It relies heavily on quantitative techniques to develop empirically supported descriptions of the behavior of various aspects of the international system. This work is capable of providing increased understanding and sharpening the intuition with regard to certain types of problems; but, so far it has had little direct application to future problems and planning. There is also a very small effort in the scientific school concerned with normative analysis which is concerned with how international actors should perform in order to achieve certain results. So far, this effort has not been very significant. In general, work in the scientific school is suitable for supporting planning but does not represent an approach to planning which is capable of offsetting existing planning deficiencies.

Systems analysis was discussed in terms of its purpose, its philosophic approach to planning, and its instrumental nature. All three are important to an understanding of systems analysis and to an acceptance of its applicability to foreign policy planning. It was argued that when it is directed toward the analysis of a future objective with the expectation of doing something about it in the present, the purpose of systems analysis is congruent with that of policy planning. Systems analysis was also shown to be inherently relevant to the needs of foreign policy planning by virtue of its emphasis in those specific areas in which present planning is deficient. In addition, it was shown to be capable of being applied to qualitative as well as quantitative problems. Therefore, since congruence of purpose, relevance to needs, and capability to be applied are all different ways of defining applicability, it follows that systems analysis is applicable to foreign policy planning. Furthermore, because of the direct relevance of its fundamental characteristics to the needs of foreign policy planning, it also follows that its application would represent a positive step toward reducing the existing deficiencies.

The key to the contribution that systems analysis has to offer to any type of planning is its fundamental nature. The very act of engaging in systems analysis represents a determination to emphasize those characteristics that collectively constitute the process that is systems analysis. In particular, it represents a determination to clarify issues and objectives and to find and evaluate alternative means of accomplishing objectives. It means a determination to evaluate alternative objectives and policies in terms of the broadest possible implications; it means consideration of

BIOGRAPHIC SUMMARY

Mr. Richard F. Norford graduated from the University of Maryland in 1960 with a degree in aeronautical engineering. He has since done considerable graduate work in that field and has earned a master's degree in international relations from The George Washington University. A professional engineer, Mr. Norford has worked since 1966 in the Systems Analysis and Engineering Department of the Naval Air Development Center at Johnsville, Pa. He took leave of this post for 1 year in order to attend the School of Naval Warfare at the Naval War College during the academic year 1969-1970.

the total cost of each alternative and the opportunities precluded by the allocation of resources to a particular alternative; and it means systematic evaluation of qualitative as well as quantitative facets of a problem. In all of these factors the basic difference between systems analysis and the traditional rational process of analysis is a matter of emphasis. Systems analysis emphasizes the systemic, systematic, objective, and explicit treatment of problems far more than any other form of analysis. Its objective, however, is the same: to help the decisionmaker. Judgment based on wisdom and experience is still required in the analysis process itself and in the use that is made of the analysis by the decisionmaker.

The analogy of systems analysis to engineering is useful for perspective. Engineering is not science, but it uses the results of science; it is not synonymous with quantitative analysis, but it uses mathematics where applicable; and, finally, engineering analysis is not a substitute for judgment and intuition, but neither are they sufficient without engineering analysis. The applicability of systems analysis to foreign policy planning should be thought of the same way.

FOOTNOTES

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12. Lannon Walker, "Our Foreign Affairs Machinery: Time for an Overhaul," *Foreign Affairs,* January 1969, p. 312.

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25. For further discussion of the traditional school and the characteristics contrasting it with the scientific school, see *ibid.*, p. 3-5; Morton A. Kaplan, ed., *New Approaches to International Relations* (New York: St. Martin's Press, 1968), p. 1-17; and Morton A. Kaplan, *Macropolitics* (Chicago: Aldine, 1969), p. 51-56.
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27. James C. Charlesworth, ed., *Contemporary Political Analysis* (New York: Free Press, 1967); Kaplan, *New Approaches;* and Rosenau. Each of these three recent edited collections presents a good cross section of the use of mathematics in the scientific school. Opposing viewpoints are also included. Another recent collection dealing specifically with simulation is William D. Coplin, ed., *Simulation in the Study of Politics* (Chicago: Markham, 1968).
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44. For example, see Charles E. Lindblom, *The Policy-Making Process* (Englewood Cliffs, N.J.: Prentice-Hall, 1968), p. 13; Senate Committee on Foreign Relations, p. 97.
45. Quade and Boucher, p. 12.
46. E.S. Quade, ed., *Analysis for Military Decision* (Chicago: Rand McNally, 1966), p. 329.
47. For elaboration on these points, see Quade and Boucher, p. 3; Samuel A. Tucker, ed., *A Modern Design for Defense Decision* (Washington: Industrial College of the Armed Forces, 1966), p. 140.
48. Hitch, p. 25.
49. Reservations concerning the use of quantitative analysis in foreign policy planning are discussed later in this paper.
50. Quade and Boucher, p. 7.
51. For a discussion of six advantages, see Herman Kahn and Anthony J. Wiener, *The Year 2000* (New York: Macmillan, 1967), p. 262.
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53. Kahn and Wiener, p. 6.
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57. For example, see Charlesworth, p. 134-149.
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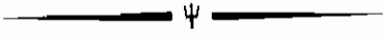

It is easy for persons who do not have the terrible responsibility of ultimate decision to call any prestige interest a vital one.

Bernard Brodie, Strategy in the Missile Age